N.A.A. BULLETIN

April
1958

In Two Sections
Section 1

Accounting in the Smaller Business

•

Applications of Direct Cost Principles

•

Labor and Labor Relations

Costing Contract Provisions

Accounts of a Labor Union

•

Digest of N. A. A. Research Report on Depreciation Accounting

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Direct Costing Opens the Door to Profit Planning

by CHARLES REITELL

THIS PAPER SETS FORTH, as its major purpose, the application of certain direct costing features to those enterprises in which no inventories are involved. The application is particularly suitable to businesses in which a specific job or a definite contract carries separate entity and for which costs and profits for each are desirable. Such enterprises as contracting, distributor companies, certain manufacturers' representatives, etc., are typical concerns. In fact, the principles and methods, as well as the illustrative material used in this article, are taken from the direct costing operations of members of a live and active national trade association interested in home improvements. Other sources of application also will be given as we move along.

The principles used, however, are not tethered to just job or contract costing. They are of particular value in determining:

1. The establishment of budgets for indirect (fixed) costs.
2. The setting of standards for direct (variable) costs.
3. Determining the profit picture by different lines.
4. Determining the profit picture for sales territories.
5. Measuring and controlling branch operations.
6. Statistical analysis for determination of adding new lines, dropping old ones, opening new territories, etc.
7. The accounting and statistical data for profit planning.

Once the reader catches the simplicity of the methods described, he is unimaginative if he is unable to see other and broader fields of application and usefulness than are shown here.

The basic principles of direct costing are closely associated with inventory evaluation, the outstanding characteristic being the keeping of fixed costs from the inventory and, in turn, charging them into the monthly profit and loss accounts. Another feature of direct costing is the breakdown of costs into indirect (fixed) and direct (variable) categories and the further separation of the so-

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called mixed costs (semivariables) into their indirect and direct components. As will be seen later, it is this breakdown feature that makes possible the evaluation of each change in the four factors affecting profits and brings into being the indirect and profit ratio by which cost control and profit planning are achieved.

This paper is pioneering in nature! As direct costing, with its radical change in inventory handling is in its infancy, many years must pass before general acceptance, is achieved. And this same resistance or slow acceptance, no doubt, will be found when direct costing is applied to non-inventory enterprises. Nevertheless, profitable performance already has been achieved in applying direct costing in non-inventory companies and those working in this newer field are laying the ground-work for a lasting monument to progress in cost accounting. To the author it brings to memory those pioneering days of standard costs when the proponents were considered either professional theorists or "nitwits" accountants, often both!

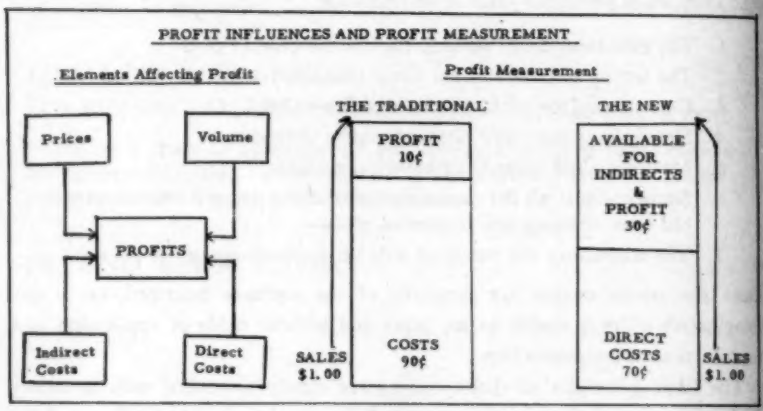

EXHIBIT 1

The Great Interplay

We get precisely nowhere in attempting to determine the exact nature and specific causes of changing earnings unless we understand the interplay of prices, indirect (fixed) costs, direct (variable) costs and volume, as these factors affect profits. The accompanying diagram (left portion of Exhibit I) shows the lay-out of the problem. Nor do we get anywhere in controlling costs unless the indirect (fixed) and direct (variables) costs are separated, with budgets set for the in-

direct costs and standard costs for the control of direct costs. The goal of direct costing, which points finally to cost control and profit planning, requires a complete insight into the interplay.

Let us now follow a detailed explanation of the method used in separating these influences upon profits. A contrast of the old and new way of measuring profit is depicted in the right portion of Exhibit 1. The traditional procedure is to take the sales dollar and, after subtracting all costs, show what portion of that dollar remains as profit. In contrast, take the same sales dollar and break it down somewhat differently. Ask this question, "How much of this sales dollar is left after the direct costs are deducted"? If the directs (variables) represent 70 cents, then the remaining 30 cents obviously must cover the payment of indirect (fixed) costs and must provide profit.

The reader should realize that the $.30 and $.70 division shown is an arbitrary one. Obviously, different product lines and the operation of different sales territories will result in different percentages. To illustrate, in beverage bottling operations, a high-costed raspberry flavor may leave 11 cents out of the sales dollar after direct costs are met, while club soda water carrying no sugar content may leave as much as 85 cents out of the sales dollar for paying indirects and contributing to profits.

Exhibit 2 is an Indirect and Profit Chart of the Glenora Roofing Company, compiled in the simplest form possible. Its purpose is to present:

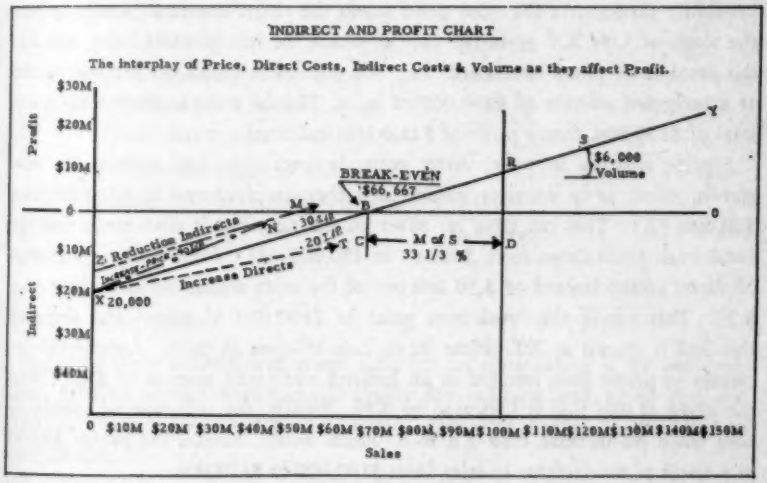

EXHIBIT 2

1. How the effect of each change in price, volume, direct costs and indirect costs can be measured.
2. The ready manner in which the break-even point can be measured.

This chart is for the company as a whole. Tables for individual products and for specific territories will be presented later. Exhibit 2 is based on the following:

Profit & Loss Statement

Net sales		$100,000
Direct costs		70,000
Available for indirects & profit		$ 30,000
Indirect and profit ratio	$ 30,000 / $100,000	= 30%
Indirects		20,000
Net profit		$ 10,000

On the vertical scale, measured from zero, are shown the indirect and profit scales, on the bottom horizontal the budgeted sales. The amount of indirects, namely $20,000, is shown on the indirect scale to the left (X). The budgeted indirect and profit ratio for the year is $.30 which, as said before, means that 30 cents of the sales dollar is available for paying off all the indirects and providing profits. As the sales move across the chart, one must recognize that the slope of Line XY gives the pace at which the indirects are being met and the break-even point is reached, i.e., $66,667. The profit of $10,000 occurs at a budgeted amount of $100,000 of sales. Should revenue show a favorable total of $150,000, then a profit of $25,000 is indicated.

Specific changes in price, direct costs, indirect costs and volume are now shown. First, as to indirects, assume that they are decreased to $15,000 from $20,000 (Z). This can have no effect on the ratio but it does mean that the break-even point drops from $66,667 to $50,000 (M). Next we have a change of direct costs. Instead of $.30 left out of the sales dollar, we now show only $.20. This moves the break-even point to $100,000 of sales. The slope of this line is shown at XT. Now let us note changes in price. Assume the increases in prices have resulted in an indirect and profit amount of $.40. Then the slope of the line is indicated by XN. Finally, the influence of volume is seen when we increase Line XR to S, which would increase the profits $6,000 as a result of the increase in sales from $100,000 to $120,000.

The following gives a summary of the influence of each of the four factors:

1. Changes in indirect costs make no change in the indirect and profits ratio but make for a movement of the break-even point.
2. Changes in physical volume also mean no change in indirect and profits ratio, the slope being the same whether XR to S or XR to Y.
3. Changes in price make for a higher or lower indirect and profits ratio, thus influencing slope of line (indirect and profits 30% to indirect and profits 40% XN)
4. Changes in direct cost make for a higher or lower indirect and profits ratio, thus influencing slope of line (indirect and profits 30% to indirect and profits 20% XT)

One more feature of Exhibit 2 must be explained. The margin-of-safety ratio shown at CD on the chart discloses in terms of per cent the amount of drop in budgeted sales that can take place before the company suffers losses. This ratio is compiled by subtracting the break-even amount from budgeted sales and then dividing the remainder by these sales.

Applying the Principles

The data below represents an asbestos siding job for which the figures are as follows (note that the form is the same as the one already illustrated):

Sales		$598.00
Direct costs		
1. Material	$196.05	
2. Application labor	132.20	
3. Salesman's comm.	89.70	
Total direct costs		417.95
Available for indirects and profit		$180.05
Indirects and profit ratio—30.1%	$180.05	
	$598.00	
Indirects		
(25% of sales)		149.50
Net profit		$ 30.55

The company's indirect and profit ratio for asbestos siding is 32 per cent. Thus, $191.36 should have been available for indirects and profit and not $180.05. Study indicated that this failure, amounting to $11.31, was due to price change.

Another example gives the annual operation of a branch office in which the same direct costing principles have been applied:

Sales		
Direct costs		$127.500
Materials	$41,280	
Labor	38,740	
Office salaries	7,200	
Salesmen	22,100	
Misc. branch expense	6,200	
Total directs		115,520
Available for indirects and profits		$ 11,980
Indirects and profit ratio—9.4%		
Indirects from central office charged to branch		1,640
Annual net profit of branch		$ 10,340

The standard indirects and profit ratio for the branch is 10 per cent. Analysis shows that the budgeted price was not attained because price concessions were necessary on account of a new product line.

Still further examples will be helpful. Direct costing highlights the serious results that often come with price cutting. A common type of erroneous thinking is that, if prices are cut a certain percentage, all that is needed to compensate for the loss is to increase volume a like percentage. As price cutting is an attempt to gain volume from a competitor, it is important to measure how far a cut can go before selling below costs. To drive home the results of such percentage and attempted "volume grabbing," two cost cards from two different contractors are shown as Exhibit 3. For illustrative purposes a 10 per cent cut in price with a 10 per cent gain in volume is used in each case. The effect for the brick siding job is a slash in profit from $111.68 to $70.29, or $41.39.

PROFIT EFFECTS OF EQUAL PERCENTAGE CHANGES IN VOLUME AND PRICE

Brick Siding			Insulation		
Selling Price:	Present	−10% Price +10% Volume	Selling Price:	Present	− 15% Price + 10% Volume
20 Squares @ $38.00	$760.00		4000 sq. ft. @ 20¢	$800.00	
22 Squares @ 34.20		$752.40	4400 sq. ft. @ 18¢		$792.00
Direct Costs:			Direct Costs:		
Material	$228.80	$249.68	Material	$240.00	$286.00
Labor	138.32		Labor	232.00	255.20
Sales Comp. (12%)	91.20	90.28	Sales Comp. (15%)	120.00	118.80
Total Direct Cost	$458.32	$492.11	Total Direct Cost	$612.00	$660.00
Available for Indirects & Profit	$301.68	$260.29	Available for Indirects & Profit	$188.00	$132.00
		190.00			
Indirects	190.00	190.00	Indirects	120.00	120.00
NET PROFIT	$111.68	$ 70.29	NET PROFIT	$ 68.00	$ 12.00

EXHIBIT 3

By careful analysis, one sees that, when you cut prices, you do not lower the direct costs save for slight drop in salesmen's compensation. When you increase volume, however, direct costs go up very much indeed, i.e., more material, more labor, more hauling, etc. Looking at the insulation picture, the same principles are found operating.

Once it is understood how price cutting to gain volume seriously affects profits, one will move cautiously in price cutting activities. Also to be remembered is the fact that price cutting does not lull competitors to sleep. They probably will meet the cut and, thus, everybody suffers. A study of these two tables, taken from actual practice, should acquaint the reader with the importance of knowing price, cost and volume interplay. Ordinarily, such instances are but a few of many hundreds. If the same price cutting is carried on throughout the company, it can readily bring the company to the brink of failure.

Some Management Controls Through Indirects and Profit Ratios

In this section of the paper, three further areas are presented. These show some of the valuable results that come hand-in-hand with the use of indirects and profit ratios. The first illustration is of value to the sales division of the company. The following table gives the volume of sales of each of the product lines. Also shown is the indirects and profit ratio of each line and the ratio of its volume to the total volume:

Indirects and Profit Ratios and Sales Volume

Product Line	*I.& P. Ratio*	*Sales Volume*	*% of Sales Total*	
1	49	$ 11,500	1.1%	
2	44	9,000	.8	
3	43	27,500	2.6	19.7%
4	39	22,000	2.0	
5	32	141,000	13.2	
6	27	163,000	15.2	
7	26	105,000	9.8	53.5%
8	24	121,000	11.3	
9	22	183,000	17.2	
10	19	112,000	10.5	
11	15	101,000	9.4	
12	12	64,000	6.0	26.8%
13	11	10,000	.9	
TOTAL		$1,070,000	100.0%	

The table is arbitrarily broken down into three groupings. The first group, having an indirects and profit ratio above 30 per cent, totals $210,500 and represents 19.7 per cent of sales. The lowest group, with a ratio below 20 per

cent, represents a sales volume of $287,000 and 26 per cent of total volume. In most companies where the author has worked, a ratio of under 20 per cent is likely to portray a weak condition, while one over 30 per cent is attractive.

Let us not lose sight, however, of the fact that indirect and profit ratios must always be evaluated in the light of sales volume. The following list gives the four conditions of the ratio in relation to volume:

Condition 1—High indirects and profit ratio combined with high volume of sales gives the best possible results.

Condition 2—High ratio combined with low sales volume indicates need of increased sales.

Condition 3—Low ratio combined with high volume of sales calls for an improvement in price and/or a lowering of costs to improve the ratio.

Condition 4—Low ratio combined with low volume of sales presents a serious situation. Intensive study should be made as to the advisability of dropping the line.

The second illustration covers important calculations in the opening up of new sales territories. When proper marketing studies have been made covering potentials and forecasts for a given area, then the application of indirects and profit ratio quite often becomes enlightening and useful. The following table gives the prospective profit structure of a new territory. With a ratio of 44.25 per cent and a net loss for the first year of only $7,000, the project appears favorable. Thus both the ratio and volume of sales give the affirmative answer as to going ahead:

NEW TERRITORY X

Net sales		$180,000
Direct costs		
Plant	$78,750	
Delivery	21,600	
		100,350
Available for indirects & profit		$ 79,650
Indirect and profit ratio	44.25%	
Indirect costs		
Plant	$26,250	
Delivery	5,400	
Advertising	20,000	
Selling	30,000	
Administration	5,000	
		86,650
Net Loss		$ 7,000

The above analysis is suggestive. It calls attention to the much broader scope that direct costing and indirects and profit ratio hold in store, namely, profit planning. Although profit planning cannot be more than introduced in this paper, nevertheless, in the next section there is shown in summary form the relationship of the ratio to profit planning and the benefits that accrue.

The last of our three illustrations covers the distribution of the indirects costs to specific objects. Cost accounting, throughout its history, has always struggled with this problem of correctly allocating the so-called overhead expenses to different lines of products, to the many marketing areas, to the several production centers, and to the various branch offices. Even at present the enigma of "how to do it" is disturbing to the more thoughtful cost accountants. Direct costing has inherited the riddle and in no small measure has contributed much toward its solution. There are different methods in practice that give satisfactory solutions.

The first method, and one readily understood, is to do nothing. Under this plan of procedure the indirect costs are written off monthly to profit and loss, and without any allocations to products. This method of handling the indirects is not so "crass" as it sounds. The matter at least merits discussion. The real basic power of any product or any sales territory is portrayed by the indirects and profit ratio. It is the factor that measures the profit sway of a given line of product or a given branch or a specific sales territory. It is the high point of each product of each market territory, and this is the place where sales management must watch, must control, and must guide for achieving successful operations. It is far more significant to see a product producing a 35 per cent ratio coupled with a satisfactory volume than to try by this or that manipulation to give the product its share of the indirect costs.

Doubt surely arises in the reader's mind on the thought that, by following the above suggested method, the full cost of the product is unknown and thus comparative costs with other lines or for pricing are not possible. However, sales management, once the indirects and profit method is mastered, can readily figure the effect of any price change in his product or that of the competitor and, by so doing, register the result upon profits. The same figuring is at hand in measuring changing cost influences.

Closely related to the problem of allocating indirect costs are procedures for controlling them. There are real and outstanding savings immediately possible the very moment indirects are put under budgetary control. In order to accomplish this, however, the management must be determined and effective. The control budget should be on a monthly basis, extending for a year. Also, the budget should be set for each indirect account.

Direct Costing and Profit Planning

Much emphasis should be placed upon the fact that, in a progressive and successful business, profit is not laid aside as a tag-end or left-over. It is not some indeterminate result coming to attention only at the end of a fiscal period, be it a month or a year. Rather, profit is carefully planned and is the first instead of the last consideration. Many managements will have to turn a somersault in their thinking to understand the value of this modern method of operation. Be it an inventory or non-inventory enterprise, direct costing furnishes the essentials. By the separation of directs from indirects, by establishing budgets for indirects and, lastly, by showing the profit-making power of products, job, etc., through the use of indirect and profit ratio, there is available all determinants for successful profit planning.

The coverage attained through the working of the profit plan extends into every nook and cranny of the company's operation. The direct costs which are tied to specific products or jobs, coupled with the indirects which are related to time and budgets, furnish the detailed data for building a sound plan. The benefits of profit planning are numerous and wide-flung. Here is a list of the more valuable contributions:

1. A profit plan establishes a specific goal of accomplishment.
2. A balanced program is assured. Over or under emphasis are ironed out before operations are under way.
3. Actual performance is compared with the plan, making possible the measurement of what was done against what should have been done.
4. Targets are provided for every division of performance. As John Dewey has said, "Men set up targets in order that shooting may be more enjoyable and more effective."
5. The plan provides helpful information for the financial department. The setting up of cash budgets, the specific needs for working capital and fiscal scheduling, are all improved by the plan.
6. The plan is the basis for control. By measuring deviations from the established goals, study and remedial action can be applied before off-standard conditions and bad judgments become established practice.

In brief, profit planning demands that thinking be done before, not after, the event. However, this paper would go far beyond the scope of its purpose should it attempt to treat fully the topic of direct costing and profit planning. It is sufficient for the time to realize that direct costing for both inventory and non-inventory businesses reaches its full measure of success when, and only when, its procedures make possible successful profit planning.

Diagnosing Some Cost-Volume-Profit Relationships

by E. G. COX

EVERY DAY WE HEAR QUESTIONS ALONG THESE LINES: Are fixed costs too high? Could we greatly improve our profits by increasing volume? What are the risks we would run if we increased prices? How much more business would we have to get to offset an additional expenditure? This is simply to say that business is constantly faced with the problem of how to optimize profits. There are three basic elements which comprise the profit we make—the price at which we sell our product, the cost of getting that product manufactured and into the customer's hands, and the volume of business which we realize. No one of these is independent of the others. Cost is a determining factor in the price we must get, price influences the volume of production, and production volume has definite influences on cost. For a business to remain in business, a proper or reasonable combination of cost, price and volume must be achieved.

Most people are aware of this relationship problem. Business is always trying to solve the problem and keep the relationships in balance. To do so, businessmen must understand the interactions and learn to measure and understand them. This article is intended to add something to this understanding and will make use of the breakeven chart, although such charts are only one of many tools available to analyze operations and are only graphic illustrations of mathematical computations based upon a given set of circumstances.

Usual Form of Break-Even Chart

The break-even chart, as commonly illustrated, appears in Exhibit 1. The vertical axis represents costs and sales. It is normally expressed in dollars. The horizontal axis represents volume. We could express volume in pounds, gallons, feet, machine hours—any unit desired—but, because we often are measuring the results obtained from doing a given volume of business in a mix of several different products, we usually reduce volume to the one common denominator, sales dollars.

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The band across the bottom of the chart represents what are commonly referred to as fixed costs. Whatever we call it, this band represents the dollar value of costs which will not change with volume fluctuations within a reasonable range. It is important that we realize that these costs are fixed only within such a range (perhaps plus or minus 10 per cent) because, certainly if we were operating at 30 per cent of full capacity, the fixed costs represented by depreciation, taxes, insurance, supervisory personnel, expense connected with plant expansion or other programs, or items of that nature, would be much less than if we were operating at 100 per cent of capacity. There would be much smaller differences between these costs at 90 per cent and 100 per cent capacity, however. At zero volume, theoretically, the total costs which would be incurred are only the fixed costs. However, at actual zero volume, they would differ from what they would appear to be if our chart was devised to illustrate our profit structure at, say, 85 per cent capacity, and they would not be the same one year as they were in another year, because of the changes which we experience from year to year in depreciation, taxes, and other items.

The line which starts at the point where the top of the fixed cost band intersects the vertical axis and which runs at an angle, represents total costs. The vertical distance between the total cost line and the fixed cost line represents variable costs, i.e. those which go up or down directly with volume fluctuations. Strictly speaking, there are no such costs. Not even material cost is directly variable with sales because, at higher volumes of production, we can purchase material in large quantities and get lower prices. For all intents and purposes, however, many of our costs vary so closely with volume of production, particularly within a reasonably small range of volume, that we can, for practical purposes, consider the variable costs to vary directly with volume. It can be seen that, at any volume on the chart, the ratio of variable costs to sales is the same.

The final line is the sales line. It rises at a 45-degree angle, representing the increase in sales on the vertical axis produced by an increase in volume on the horizontal axis, assuming that product mix and price stay constant.

We really are studying the effects to be encountered within a small volume range such as that outlined by the vertical dotted lines on Exhibit 1 and the extensions of fixed or variable cost lines beyond this volume range are really only to set points of reference. As a whole, the chart provides a picture of the dollars of sales, the total costs, the fixed costs, and the profit we will realize within a reasonably small range of volume, assuming that all factors other than volume stay constant.

High-lighting the Relevance of Variable Costs

A further refinement of cost-volume-profit analysis is embodied in Exhibit 2. This is exactly the same break-even chart as Exhibit 1, except that now the variable costs are shown at the bottom and the fixed costs are indicated to be a band on top of the variable costs. If we consider the costs represented here to be only costs of manufacture, the vertical distance between the variable cost line and the sales line would represent contribution margin. The distance between the total cost line and the sales line would represent gross margin. This gives a graphic definition of these two terms—contribution margin and gross margin—as often used.

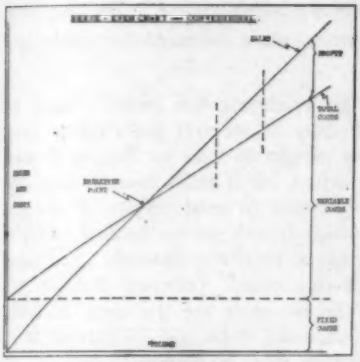


EXHIBIT 1

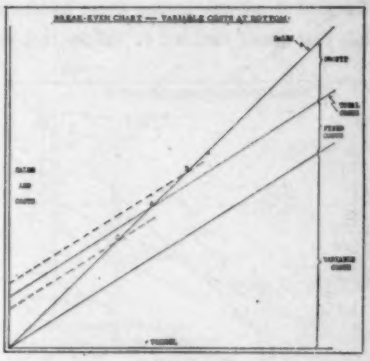


EXHIBIT 2

Another point which is demonstrated by this chart is that, given a constant pattern of variable costs, the only effect that a change in fixed costs will have is to raise or lower the break-even point as illustrated by the intersections of the dashed lines and the sales line. If we increase our fixed costs but do not alter our variable costs, we raise our break-even point from Volume A to Volume B. If we lower our fixed costs but do not alter our variable costs, we lower our break-even point from Volume A to Volume C. These changes in fixed cost could arise from many sources, but one common change could be the effect of depreciation taken on our facilities. With new facilities, our depreciation would be high. With old, low-cost or depreciated facilities, our depreciation would be low.

Of course, given a set volume of business, we will lower or raise our profit dollars if we increase or lower our fixed cost. A change in any cost at a particular volume will affect profits. But, regardless of what fixed costs are, if the ratio of variable costs to sales remains the same, a given increase in volume

in both cases will produce the same dollars of increased profit in both cases. For illustration, let us assume that a manufacturer has two separate factories making the same product. Each factory has the same production capacity and each has the same ratio of variable costs to sales. Each has been producing at the same volume. One factory has a higher fixed cost than the other because it is newer and has more expensive equipment and depreciation charges are higher.

Management wants to produce more of the product but wants to do it at only one factory. It also wants to get the greatest benefit in profits from the increased volume. The manufacturing manager says, "Let's produce this additional volume at Plant B. It has larger fixed costs and it will give us better margins if we can spread these fixed costs over a larger volume." The president has just about decided to follow this suggestion, when the controller speaks up:

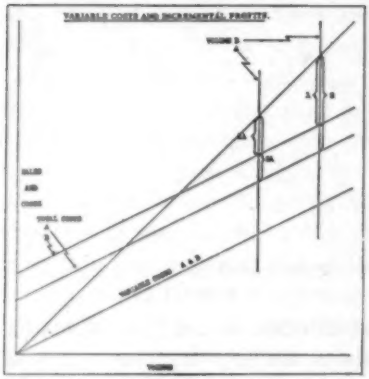
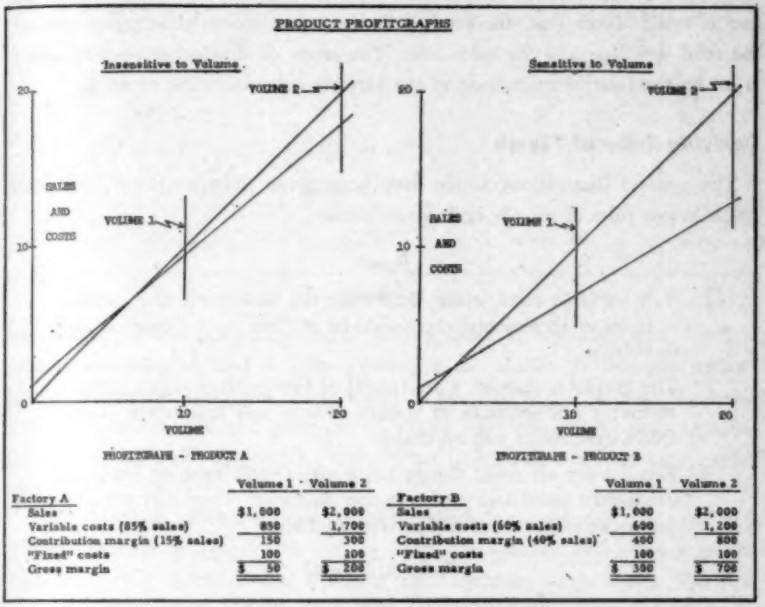


EXHIBIT 3

"By producing this added volume at Factory B, we will get a better ratio of margin to sales on Factory B production, but it really doesn't make any difference in total dollars of margin which factory we use because variable costs at both are identical. And here is our proof. (offering Exhibit 3) Variable costs are the same in both factories. Total cost in Factory B is higher than in Factory A because of the magnitude of fixed costs. But regardless of which factory used, the increased profits will be the same. The increased profit at Point 1 on the graph as compared to Point 1-A is the same as the increased profit at Point 2 as compared to Point 2-A. This would seem to establish that, with a constant ratio of variable cost to sales, fixed costs will have no effect on the dollars of incremental profit to be achieved by an increase in volume. Therefore, it is only our variable costs which influence the incremental profits to be obtained by volume changes."

Hence, let us look at the relative effect of variable costs on incremental dollars of profit. Again assume we have two factories, each producing the same product. Each has been producing the same volume. Each has the same productive capacity. Each has the same fixed costs. However, variable costs in Factory A are at a higher ratio to sales than in Factory B. Management can sell

additional product but wants to maximize its profits, and it asks the controller which factory should be used. The controller advises using Factory B, (the one with the lower variable costs) and presents the tabulated data at the bottom of Exhibit 4 as proof.



Factory A	Volume 1	Volume 2
Sales	$1,000	$2,000
Variable costs (85% sales)	850	1,700
Contribution margin (15% sales)	150	300
"Fixed" costs	100	100
Gross margin	$ 50	$ 200

Factory B	Volume 1	Volume 2
Sales	$1,000	$2,000
Variable costs (60% sales)	600	1,200
Contribution margin (40% sales)	400	800
"Fixed" costs	100	100
Gross margin	$ 300	$ 700

EXHIBIT 4

Note that the Volume 1 data for both factories are the same except for the magnitude of variable costs and their relationship to sales. The Volume 2 increase in Factory A will generate $150 additional margin. The same increase in Factory B will generate $400 additional margin. Hence the product manufactured in Factory B is more sensitive to volume change than in Factory A because of the relative magnitude of variable costs and their relationship to sales. Possibly this statement needs clarification. It may well be asked what is meant by saying that the product at Factory A is relatively insensitive to volume. It means something quite definite. Gross margin would have gone from $50 to $200—an increase of 300 per cent. At Factory B, gross margin would have gone from $300 to $700, only 133 per cent increase. Yet, for the same increase in volume, Factory A gross margin increase will be only about 40 per cent of the increase which would be obtainable at Factory B.

The same information may be examined graphically, as also shown in Exhibit 4. Here we have typical breakeven charts on two products, one of which is relatively not sensitive to volume, as typified by Product A, and one relatively sensitive to volume, as illustrated by Product B. Note for Product A that the total cost line closely parallels the sales line and the angle between the two is small. Note that, for Product B, there is a greater divergence between the total cost line and the sales line. The angle of divergence in both charts is set by the relative magnitude of the variable costs as a ratio of sales.

Deriving Rules of Thumb

The general illustrations which have been given illustrate three points and result in two rules of thumb, both given below:

Points

1. It is variable costs which determine the sensitivity of a product in terms of incremental margins to be realized from a given change in volume.
2. The graphs in Exhibit 4 are typical of two products—one which is relatively not sensitive to volume change and one which is relatively sensitive to volume change.
3. Fixed costs, all other things being equal, will raise or lower the break-even point and profits as they fluctuate. They will not affect the sensitivity of a product to volume change.

Rules of Thumb

1. A business which has high fixed costs usually has low variable costs, and fluctuations in volume result in wide fluctuations in profit. This same business has a high contribution margin and usually has a high "contributed" value (value contributed by the business to the product, also described as value added).
2. High fixed costs are not an indication of good profit structure unless they have been incurred as a result of automation or mechanization which reduces labor content, have resulted from putting in place facilities which make possible integrated manufacture, or have come about through an increased capacity to produce a greater volume.

Problems and Actions

The breakeven charts in Exhibit 5 reflect a product not sensitive to volume change. Note in the left hand chart how closely the total manufacturing cost line parallels the sales line. Note also the very low fixed and high variable

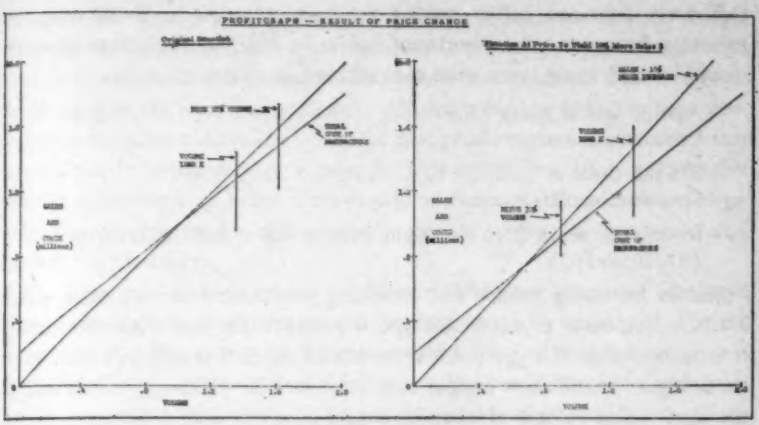


EXHIBIT 5

composition of manufacturing costs. This product is not profitable, has low contribution margins, and is quite insensitive to volume. It certainly follows the rule of thumb just given. Note that a 20 per cent higher volume, assuming the same product mix and sales prices, would have resulted in only approximately $50,000 more margin and the product still would not have been profitable.

Since increased volume in this product (which had only a 21 per cent contribution margin in Year X) is not, by itself, the solution to making it profitable, we should examine what a selling price increase would mean. For purposes of illustration, I have charted in the graph at the right in Exhibit 5 the effect of selling the Year X volume at prices which would have created 10 per cent more sales dollars. Such a situation, had management been able to retain its sales volume, would have created $135,000 additional margin. Stated another way, each one per cent increase in prices would have generated an additional $13,000 margin. About four per cent higher prices would have generated the same additional margins in Year X as a 20 per cent increase in volume.

It is unlikely, of course, that the volume could have been maintained at these higher prices. Approximately 30 per cent less volume could have been sold at 10 per cent higher prices and the same dollars of margin would have been realized as in Year X. To the extent that 10 per cent higher prices would have created a drop in volume of less than 30 per cent, larger margins would have been realized. Certainly one point which is obvious from this analysis is that any reduction of price to a customer to obtain a sale should have been very

judiciously examined before making the price adjustment. Every dollar of reduction through a price adjustment had to be offset by five dollars of incremental business at the lower price to break even, as follows:

Assume sale at going price	$100
Contribution margin	21
If a sale made at	$ 99
Contribution margin would be	20

In order to make $21, we would have to sell at $105 at lower price (21/20 = 105)

Besides increasing volume and increasing prices, there are two other means available to increase profits in this type of product. The first is selective selling. It is obvious that, if a given dollar volume of material is sold in a mix which has a higher contribution margin rate, more income will be generated than if the same dollar volume of material is sold in a mix with a low contribution margin rate. The second approach is through reduced costs and, more particularly, through reduced variable costs. It is interesting to note that, had the cost of manufacture been four per cent less, this product would have generated the same dollars of gross margin as could have been obtained by 20 per cent greater volume at the same selling prices.

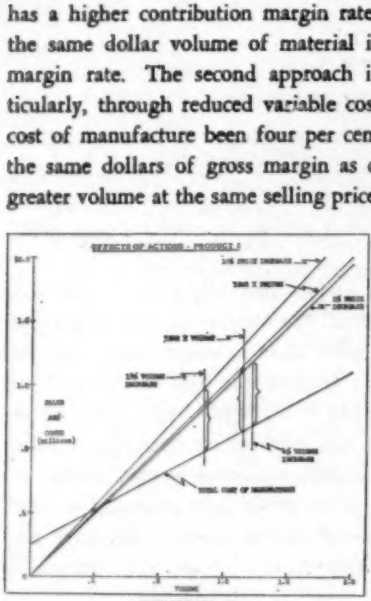


EXHIBIT 6

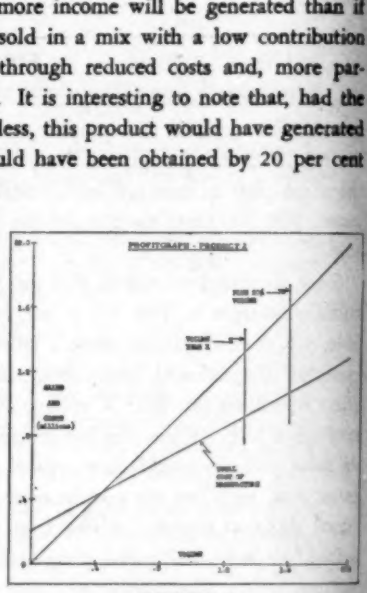


EXHIBIT 7

Exhibit 6 is the profitgraph on a second product. Let us pause for a moment and examine the similarities of and differences between this product and one we have just reviewed. Sales volumes for both products in Year X were essentially the same. The dollar magnitude of fixed costs for both products was essentially the same. But here the similarities end. The previous product was marked by high variable costs, low contribution margin, and an insensitivity to volume

changes. The second product has lower variable costs, a contribution margin rate twice that of the first, and is very sensitive to volume change. A 20 per cent increase in volume in this second product would have generated $120,000 additional margins, as compared with only $50,000 which would have been generated by the same volume change in the first product. Certainly, management would want to obtain as high a price for this second product as possible but must be constantly alert to the effect of price on volume. If necessary, management should be prepared to reduce price in order to maintain or increase volume. Exhibit 7 is illustrative.

If a 2 per cent price decrease could have resulted in at least 4 per cent more volume, the dollars of margin on this product would be unchanged. To the extent that a 2 per cent price decrease would have generated more than a 4 per cent volume increase, additional income dollars would have been generated. In the first product we discussed, a 10 per cent price increase would have to have caused a 30 per cent volume decrease before total margins would have been reduced. In this second product, however, only about 18 per cent volume decrease at 10 per cent higher prices could be absorbed without reducing profits. Certainly one cannot ignore the benefits of selective selling in this second product. This is a concept of which management must be aware in any product. Business must also be ever alert to cost reductions. All that is needed to change the profitgraph of the second product to one similar to the first is to suffer price reductions without decreases in variable costs or to incur increased variable costs without corresponding selling price increases.

Summing Up

We have reviewed theory and illustrations. Can we derive principles for application in situations which may arise? I think that we may, and that we may close this article with five principles which seem to me to stand out:

1. It is variable costs which determine a product's relative sensitivity to volume change. High variable costs are associated with low sensitivity, low variable costs with high sensitivity.
2. If variable costs stay constant, increases or decreases in fixed costs alter the breakeven point. They will not influence the product's sensitivity to volume change.
3. If variable costs can be reduced, even at the expense of increasing fixed costs, a product's sensitivity to volume change will be increased.
4. Pricing for volume in a product with low variable costs is likely to be wise. As variable costs become greater, pricing for volume becomes less and less advisable.

5. Without good knowledge of the variable cost structures of its products, management cannot do an intelligent job of balancing its cost volume-profit relationship.

A LETTER FROM FRANCE

Editor, N.A.A. Bulletin:

I have before me the April 1957 issue of the N.A.A. Bulletin in which I read on page 1014, lines 4 and 5, "Logarithmic scales are never started at zero, *nor can negative quantities be presented.*" (Italics mine)

In theory, it is accurate to say that negative quantities cannot be represented on a logarithmic base. It is possible, however, in practice, to do this very conveniently. In a book which I have just published on the subject of using graphs in business, I give the method for accomplishing this and I enclose the pages which deal with the question. Perhaps it will interest your readers to know of this possibility.

St. Leu-La-Foret
February 19, 1958

Charles Voraz

EXHIBIT 1

[Editor's note: Mr. Voraz enclosed the following excerpt (and accompanying Exhibit) from the book referred to.]

"It is possible that some may have an interest in representing a negative value on a semi-logarithmic base. How do you do this, since the geometric progression (which this base uses) tends toward zero without ever reaching it? One can overcome the difficulty by showing below the usual logarithmic scale, a reversed logarithmic scale. The method (Exhibit 1) is to make the first interval of each of the two scales coincide exactly. Only the value of this first interval being 10^n, one loses, *ipso facto,* the possibility of representing (on the graph) any of the values included between + and — 10^n except by plotting them along a common axis, but this is fundamentally unimportant."

Digest of N.A.A. Research Report No. 33

Current Practice In Accounting For Depreciation

Presented below is a digest of findings in a new N.A.A. Research Study dealing with Depreciation. Members of the Association who wish a copy of the full report may obtain one copy without charge on request to the National Headquarters Office. A convenient order card will be mailed to you in a few days for this purpose. Copies of the report are also available to non-members at $1.50 per copy. Members may obtain additional copies at the same price.

THE POST-WAR PERIOD has been one of rapid change for most companies, necessitating replacement of worn out equipment, modernization to take advantage of technological progress, and acquisition of new facilities to accommodate expanded volume. At the same time, the reduced buying power of funds made available by depreciation charges on old assets has often been inadequate to meet costs of replacement. High income tax rates have also made it difficult to retain enough cash from income to meet current needs for funds. This study reexamines accounting for depreciation in the light of present day conditions and points out trends that are emerging. Practices described in the report are drawn from fifty-five companies.

Characteristics of Depreciation Cost

Depreciation differs from many other costs in that a lump-sum expenditure is made for a series of service-years of productive capacity. If cost of this capacity is not fully recovered as the asset is used up, the loss on disposition has an adverse effect on net income in a period subsequent to and unrelated to the time of use.

The amount of depreciation cost applicable to individual periods ordinarily cannot be traced directly to these periods, but it can be allocated with the aid of certain assumptions. While assumptions underlying the various methods can be rationalized, there is no way to prove that annual depreciation costs resulting from one method are correct to the exclusion of annual costs from alternative methods. Usefulness of the resulting costs for their intended purpose is the primary test applied in selecting a depreciation method.

Depreciation methods employed in the accounts have generally been those methods elected and acceptable for federal income tax purposes. However, depreciation cost is important for a number of purposes other than for determining taxable income. Purposes distinguished for discussion in the report are: (1) providing funds for replacements, modernization and expansion; (2) determining periodic net income reported to management and stockholders, (3) determining product costs for purposes of pricing and sales emphasis; (4) comparing alternatives in selecting and replacing depreciable assets. A depreciation method which is the most advantageous one available for tax purposes is not necessarily the best method for other purposes. The study examines widely used depreciation methods in terms of each of these purposes.

Determining Depreciation Cost for Income Tax Purposes

The study shows a strong trend away from the straight line method and toward declining charge depreciation methods for tax purposes. Prior to 1954, almost all of the fifty-five companies participating in the study used the straight line method for both tax and accounting purposes. The Revenue Code of 1954 led most of these companies to review their depreciation methods and a majority of the same companies elected either the sum-of-the-years digits or the declining balance method for applicable assets in preparing tax returns.

Declining charge depreciation methods yield larger depreciation deductions during the earlier years in an asset's life. With a single asset, tax benefits received in the early years are subsequently offset by declining depreciation charges. However, where a company has numerous assets which are replaced as retirements occur, tax savings from declining charge depreciation are retained indefinitely. With continuing growth in the amount of depreciable assets, additional tax savings occur. These tax savings are lost only if liquidation of depreciable assets takes place. The report includes an illustration comparing annual and cumulative depreciation charges under straight line, sum-of-the-years digits, and declining balance methods during periods of growth, stability, and liquidation of depreciable assets.

Depreciation Is a Factor in Financial Management

Keeping intact the capital invested in depreciable assets and providing funds for replacements, modernization, and expansion are financial management functions. Depreciation policies and practices are important in the successful performance of these functions.

Recovery of capital invested in depreciable assets must be made from sales revenues during the economic life of the assets. In formulating depreciation policy to attain this objective, both adequacy of depreciation charges and their timing are important.

The study disclosed three distinct points of view with regard to what depreciation charges should accomplish. Briefly stated, these are:

1. Depreciation charges are adequate when they enable a company to recover the number of dollars capitalized in the accounts when a depreciable asset is acquired.
2. No profit has been earned until provision has been made in current costs for maintaining a company's present competitive position and earning power. Expenditures required to accomplish this objective often exceed the amount of depreciation charges determined in accord with accounting conventions and income tax regulations.
3. Current depreciation charges should provide buying power equal to that possessed by dollars at the time originally committed to depreciable assets now being depreciated. As a consequence of inflation, depreciation charges on assets acquired some years ago would have to be substantially increased in order to reflect the current cost of productive capacity being used up.

Generally accepted accounting procedures and tax regulations are based upon the first view. On the other hand, management representatives interviewed generally hold the other viewpoints. However, so long as depreciation charges in excess of historical cost are not deductible for income tax purposes, a portion of the funds needed to replace capital equipment must come from sources other than depreciation.

Where there is opportunity for profitable use of funds in a business, early recovery of capital from depreciable assets and postponement of taxes are advantageous. Dollars available today are worth more than dollars which will become available in the future because current dollars can be invested now to earn a return which compounds with time. Early recovery of capital in depreciable assets also reduces the risk that full recovery may not be possible. These reasons have had a strong influence in convincing a majority of the companies participating in the study to elect declining charge depreciation methods.

Matching Depreciation Cost with Related Income

While rules established for administration of income tax laws do not govern reporting of income to stockholders, practice in accounting for income usually conforms to tax practice. Where declining charge depreciation methods permitted under the Revenue Code of 1954 have been adopted for tax purposes,

the same methods are also employed in the accounts by most of the companies participating in this study. Apart from the advantages of keeping the accounts in agreement with income tax returns, opinions were often expressed to the effect that declining charge methods provide a better measure of depreciation cost than does the straight line method.

Depreciation in Cost for Managerial Guidance

In most of the companies participating in this study, the same amount of depreciation determined for over-all financial reporting purposes is also charged into departmental costs. Where declining charge depreciation methods have been adopted, these methods are usually thought to yield satisfactory departmental and product costs for internal managerial purposes.

In some companies, management feels that departmental cost comparisons are obscured by concurrent use of different depreciation methods which give different depreciation charges from period to period. In other companies, management feels that product costs and product profit margins are distorted by depreciation practices chosen for tax reasons. Where different depreciation methods are employed in the general financial accounts and in the factory accounts, the two sets of accounts are coordinated through a variance account. An alternative method is to prepare statistical cost constructions apart from, but reconciled with, the financial accounts. This practice is usually followed when it is desired to include depreciation on current replacement value of assets in product costs.

This study indicates that circumstances prevailing in each company need to be studied as a basis for decision as to what depreciation practices are most appropriate for various purposes.

Providing Cost Information for Labor Contract Negotiations

by HARTLEY W. VOIGT

THE LABOR MOVEMENT TODAY HAS LARGE FINANCIAL RESOURCES, skilled leaders, and professional staffs of economists, statisticians and lawyers who can capably prepare economic analyses to support arguments presented by the union at the bargaining table. Hence, many union negotiating committees can now go into negotiations with facts and information to back up their arguments. On the other hand, the management group too often goes to the bargaining table almost completely unprepared. It is not unusual for a union negotiating committee to know more about conditions in the immediate geographic area and in other plants in the same industry. This need not be. Management should and can be just as well prepared as the union.

To prepare for negotiations, management should gather information and plan its negotiation strategy. It should gather wage data, request information from other companies, and study contract provisions. The next step is to plan the negotiation strategy. Should management try to trade with the union for some concessions? How much of a package increase should a company be prepared to give, if any? What request is the union likely to make? These are all items which need to be considered. Meetings of the company's negotiation committee should be held to help coordinate the group's thinking. Another problem to be considered is how much information the union will request from the company and how far management is willing to (or must) go. The National Labor Relations Board and the courts have upheld the union's right to certain types of information for bargaining purposes.

The Accountant's Role In Preparing for Negotiations

When the accountant is asked for information, his problem is how to present it in the most logical and easily understood way. If it is not asked for, one approach is to calculate the present fringe benefit costs and present them to

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management with the explanation of their applicability to forthcoming negotiations with the union. Just before negotiations get under way he can present revised calculations if such are needed. He can also offer to calculate the cost of contract changes proposed during negotiations. The important part is to show that he is willing and capable of providing information which will be helpful. Generally the company's negotiators put in long hours, and have plenty of problems to occupy them and are glad to have assistance in evaluation of economic proposals and counter proposals. Sometime during negotiations or while a strike is on, a company may use letters and newspaper advertisements to communicate with its employees and the community. Any figures used should be carefully checked by the accountant and he should be sure that he can prove them if the need arises.

As soon as a contract is signed, the accountant should make certain that its effect on hours worked, wages and fringe benefits is determined. He should take immediate steps to provide an accumulation of relative data through the company's records. Part of the information comes from the payroll records and part from the general records. If the information is properly kept throughout the term of the contract, it will always be available for the company's use in various ways. For example, an information program in the house organ might include articles on pensions, group insurance and the other fringe benefits, giving as a part of the information given, the dollar and cents value of contract benefits to employees.

Ways of Presenting Costs of Contract Provisions

There are various ways of presenting the costs of economic items in the labor contract. The most common are:

1. Cents per hour worked.
2. Annual cost per employee.
3. Total annual cost to company.
4. Percentage of total payroll cost.

Each of the above has its place and it may be found desirable at one time or another to calculate costs under all of them. Cents per hour worked and annual cost per employee express costs in terms which everyone at a bargaining table can understand and ones which mean something to the individual. Therefore, these are very effective ways management has of presenting information to employees and to a union negotiating committee. When the information is presented as total annual cost to company and percentage of total payroll cost, it is difficult for the employee to relate it to himself and, usually, he does not have the necessary information to evaluate its relationship to the company. Percentage of total payroll cost is sometimes a useful way of showing the relationship between the various benefits and straight-time labor costs. However,

it is a less significant way to state costs, because it neither shows the benefit to the employee or the cost to the company.

In general, unions seem to prefer to express cost in terms of cents per hour and management generally goes along with this method of evaluating benefits. Perhaps the fairest way of presentation is to express the value of the benefits in terms of cost per hour worked. This represents both the amount a company has had to pay for each hour of work purchased from the employees and the amount the employees received for each hour of work sold to the company. However, this basis must often be modified when a comparison is contemplated. For example, the Monthly Labor Review published by the United States Department of Labor, Bureau of Labor Statistics, reports average weekly hours, average weekly earnings and average hourly earnings of production workers in various industries. These statistics are often referred to by unions when a company's rates are lower than industry average, and by a company when its rates are higher than its industry average. In this publication, average weekly hours means the total hours for which pay is received and includes hours paid for holidays, idle time and vacations taken.

XYZ Manufacturing Company - Hours and Earnings of Union Employees - 1956

	Company	BLS Average
1. Average hourly earnings	$2.03	$ 1.94
2. Average weekly hours	41.1	40.5
3. Average weekly earnings	$83.43	$78.57

1. Calculated by dividing total gross payroll for union employees by total man hours for union employees. Total gross payroll is the total pay before any deductions for social security taxes, withholding taxes, union dues, etc., and includes pay for overtime, shift premiums, holidays, vacations, etc. Total man hours are the total hours for which pay is received including hours paid for holidays, vacations taken, etc.

2. Calculated by dividing average total man hours per week for union employees by average number of union employees.

3. Calculated by multiplying average hourly earnings by average weekly hours.

Note: The BLS averages given are for the Blank Manufacturing Industry as published for December 1956. The averages for the XYZ Manufacturing Company were prepared on the same basis as that used by the Bureau of Labor Statistics.

EXHIBIT 1

Exhibit 1 is an example of the type of information the accountant might prepare, using statistics from the Monthly Labor Review. This exhibit compares hours and earnings of the union employees of the XYZ Manufacturing Company with the industry average. It is important to explain on the exhibit the basis which has been used in making the calculations and also to explain the calculations, themselves, even though it may seem elementary to do so.

Economic Benefits Provided by Contract and Law

Contracts today contain a great many economic items. In addition, a number of other labor cost items are required by law. The cost of many of these are or can be accumulated by the accountant in the payroll and general records of the company. The most common of these cost items are as follows:

1. Shift differential payments.
2. Premiums for overtime and work on Saturdays & Sundays.
3. Vacation payments.
4. Holiday payments.
5. Payments for time not worked (call-ins, reporting pay, jury duty, meetings, etc.)
6. Group insurance costs.
7. Pension costs.
8. Federal O.A.S.I. contributions.
9. State and federal unemployment compensation costs.
10. Workmen's compensation insurance.

The first five items listed above are received by the employee in his pay check. He watches for them and makes sure that no mistake has been made in their calculations. While he knows all about them, he may not have thought of them in terms of cost to the company. This side of the picture readily lends itself to explanation of costs to employees and their negotiating committees. The last five items are in the nature of insurance and the employee does not receive direct benefits until some situation occurs in the future. While he may contribute towards the cost of some of the benefits, too often the employee has no idea of their cost to the company.

XYZ Manufacturing Company - Labor and Fringe Benefits Costs Per Hour Worked by Union Employees - 1956

Cost of Straight Time and Fringe Benefits Paid to Union Employees		Cost of Fringe Benefits Paid to Others for Benefit of Union Employees	
1. Straight-time pay	$1.900	1. Group insurance	$.045
2. Shift differential payments	.072	2. Pension plan	.102
3. Premium pay for overtime	.037	3. F. I. C. A. (Federal old age & survivors insurance)	.043
4. Premium pay for work on Saturdays, Sundays & holidays	.098	4. State unemployment compensation	.030
5. Vacation pay	.081	5. Federal unemployment compensation	.004
6. Holiday pay	.053	6. Workmen's compensation insurance	.017
7. Idle time pay (payment for time not worked)	.005		
Total cost per hour of work	$2.246	Total cost per hour of work	$.241

Only payments made to union employees and the hours actually worked were used. For each item the total actual cost as shown in the payroll records was divided by the total hours worked.

Computed by determining which part of the total cost applied to union employees and then dividing that cost by the hours worked by union employees.

Grand total cost of all benefits per hour worked $2.487

EXHIBIT 2

Example of Benefit Cost Calculation

An example of how the cost of fringe benefits might be presented is shown in Exhibit 2. The benefits are shown in two sections, those which the employee receives in his pay check and those which are paid to others for his benefit and are not counted as earnings. Often it may be necessary to attach a second sheet of explanations and interpretations. It is important for management representatives to know how the costs were determined and for the accountant to be able to prove the figures if it should ever be necessary to do so.

Straight-time pay represents the amount paid at the employee's regular rate without any premium payments or shift differentials. The average straight-time pay can be calculated by dividing the total payments by the hours worked. This method is preferable when figuring past costs. Another method is to average the various rates by multiplying each rate by the number of employees involved, adding the totals thus obtained and dividing by the total number of employees. This method is useful where increases of different amounts are being considered for various employees or classes of employees.

Employees working evening or night shifts are frequently paid a shift differential. This can be a rather sizeable figure for a company operating 24 hours per day. If the proper segregation of this cost is made in the records, it is a simple matter to figure it as a cost per hour worked. Premium payments for overtime work and work on Saturdays, Sundays and holidays are payroll costs that fall in the same category as shift premiums. In some industries, the employees work regularly Monday through Friday and normally work only eight hours a day and forty hours a week. To companies in these industries, such premium payments represent an insignificant cost. On the other hand, to companies in continuous process industries, where operations continue twenty-four hours a day, seven days a week, such payments are quite costly.

The cost of vacation and holiday payments is generally easy to calculate but the cost of vacation payments can be deceiving if total future costs are not properly evaluated. In a relatively young company, the granting of three weeks' vacation after ten years' service and four weeks' vacation after fifteen years may make very little change in the company's immediate cost. However, the total cost fifteen years later, when all present employees are eligible for four weeks' vacation, may be prohibitive. Contract provisions may require a company to pay employees for other time not worked when certain conditions occur. In case of a call-out, pay for a certain number of hours may be required even though the employee may work less than an hour. Meal allowances, jury duty pay, and funeral leave are among the many items that fall in this category.

Group insurance and pension plan costs are sometimes paid for entirely by a company and sometimes the employee pays part of the cost. Either way the company's cost needs to be calculated and projected. If any insurance dividends or other refunds are made, these should be taken into account in the calculations. Depending on the makeup of a company's work force, future costs can vary considerably from present costs. Recently a company, with the help of its insurance carriers, calculated the future cost of its present group insurance and pension programs. Management was quite surprised to find that, within fifteen years, the cost of the programs would increase by an amount greater than the company's current year's profit.

Certain payments for the employees' benefit, such as federal O.A.S.I. benefits, state and federal unemployment compensation and workmen's compensation insurance, are required by law rather than contract. These should be included in any calculation of employee benefit costs.

Some Costly Incidental Provisions

Discussion has been limited to the more common fringe benefits but many others could be listed. For some the cost will be difficult to calculate but the accountant can provide helpful information for most. Some of the most difficult costing problems evolve from the economic effects of the operation of seniority systems, job bidding and bumping systems, and concessions resulting in excessive job manning. The seniority clause in a labor contract may operate so that an employee may be kept on a job which he is obviously not capable of handling. It may specify that, when employment declines, senior employees may "bump" into jobs for which they have no experience. A listing of the actual or estimated cost of provisions such as these would probably surprise top management of many companies. Once such clauses are included, it is a difficult matter to negotiate them out of a contract.

Working Out The Information Beforehand

Management should prepare the blue prints for negotiations as carefully as the blue prints for a new building. Planning, study and discussion are necessary. The accountant can and should be one of the architects working on the blue prints. From his specialized knowledge, he can help avoid pitfalls. He can analyze the costs, calculate the stresses of various proposals and possibly suggest a more economical and sound plan. But it may be necessary for him to offer his services and not wait to have them requested.

A CASH PAYROLL WITHOUT COINS—by Raymond C. Voght*

THE TASK OF PREPARATION of cash pay envelopes for some 3500 employees at American Optical Company encouraged us to seek a method of preparing these "pays" without coins. We could see that, if we could devise a method of carrying out this idea, it would result in a great saving in the time used for putting up the cash in envelopes, as well as reducing the weight of envelopes to be carried by the plant paymasters to the employees. However, it would be necessary to develop a plan which would not violate any law relative to the payment of wages earned nor be subject to criticism by the union as a violation of contract provisions. It was decided that rounding to the nearest dollar would not fulfill these requirements. It was, therefore, decided to increase each individual payment to the next higher dollar.

Discussion of our problem with representatives of the payroll machine equipment company finally opened the way to adopting the new method. Two new items were added to the pay statement:

1. A new item labeled "advanced this pay" and
2. A new deduction labeled "advanced last pay".

In the first week of operation, all "pays" ending in cents were carried to the next full dollar and the difference which had been added was entered on the pay statement and labeled "advanced this pay." Since these advances varied from $.01 to $.99, the average would be about one-half dollar per employee. In the second week's pay statement, the item entered in the first week as "advanced this pay" was now entered as a new deduction item labeled "advanced last pay." An adjusted net pay was then determined for the employee and the procedure repeated for paying at the next highest dollar value. The payroll machine was programmed to proceed automatically through the procedure, once the employee's net pay was determined.

The plan was successfully introduced by a program of plant communications through its newspaper and it was very satisfactorily received. It resulted in a speed up of preparation of pay envelopes and, in addition, brought about one unanticipated advantage, in that many of the small claims for shortages were covered by the amount advanced, thus saving the preparation of many special payments of small amounts on pay day. The "centless" payroll is now well-accepted and the final settlement can be made at the time of separation of the employee.

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Changed Qualifications for Industrial Accountant

by RAYMOND B. JORDAN*

AS ACCOUNTANTS, WE HAVE NOT PREPARED ourselves or our employees for the advent of the revolution represented by the inroads which operation research, with electronic data processing, is making in the industrial accounting field. These new methodologies are demanding personnel with a background startingly different from those of us who have entered the accounting field during the past quarter century. Whereas a background of accounting and accounting studies was the prime prerequisite for employment in the accounting field during the past decade, the man with such a background as his sole "stock in trade" will disappear as rapidly from the American industrial scene as the "man in the green eyeshade" disappeared during the days of our predecessors. The years immediately ahead will demand men with mathematics and engineering as a major field of study and with business administration and accounting as a minor.

In order for us to meet the demands involved, we must prepare ourselves and our employees through a serious program along the following lines:

1. We must become acquainted with the new methodologies by attending seminars and, if necessary and practicable, by a leave of absence from our present positions to attend special schools to learn the techniques of electronic data processing and operations research.
2. We must program on-the-job training to pass on to our employees the information we have gathered in these special classes.
3. We must start now to properly evaluate the capabilities of our employees and to program required alteration of staff skills "mix." The "doers" will be eliminated by the machines; we will need in the future the men who can tell us "why it happened," not "what happened."
4. We must revise our background requirements on new employees to include a basic knowledge of mathematics from algebra through integral calculus. Too often our accounting employees, past and present, have been individuals who turned to the accounting field through failure to comprehend mathematics, odd as that may seem to some. Such an employee will be "lost" in the new field.
5. We must think along the lines of employing also the man who possesses the mathematical, engineering and possibly shop experience, with no accounting background whatsoever. On-the-job training can supply all the accounting necessary.

The operations research and electronic data revolution is upon us. Let us honestly admit it and start now to prepare ourselves and our associates to meet its demands.

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Efficient Accounting for the Small Company

by IRIS P. BERST

THE ACCOUNTANT WHO HAS HAD EXPERIENCE in small business knows, perhaps better than anyone else, the problems of such an enterprise. In no other type of organization is there a greater demand upon his time. He is responsible for everything from helping to formulate policies to the arduous task of writing collection letters. His greatest hope for success lies in effective planning and strict adherence to his established procedures. The training and development of his staff, with growing faith in their abilities, makes possible his accomplishments.

In our organization, there are two manufacturing companies operating as separate entities and producing entirely unrelated products. Both are incorporated and have the same management personnel. Company A is the original firm, and Company B a recently formed enterprise. The diversity of record requirements of the companies is indicated by the following data:

	Company A	Company B
Product	Tools, dies, plastic and rubber molds	Electro-magnetic instruments
Cost accounting	Job cost	Product cost
Inventories	In-process only	Raw, in-process and finished
Employees	35	7
Annual sales	$400,000 to $600,000	Approx. $50,000
Individual sale	$50 to $3,000	$300 to $800
	Combined	
Office personnel	3 management 1 accountant 1 engineer 2 clerks	

Our situation is not exceptional. In our community, there are approximately six hundred firms with office staffs of less than five persons. Since we are operating in a high-wage industrial center, it is difficult to secure sufficient trained workers and still stay competitive. Many local tool and die firms are too small to employ a company accountant or are engaged only in contract sales where

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the office work-load is small. However, our company is principally engaged in time-and-material orders because of special ability in experimental work. Hence, complete cost and accounting information is extremely important. Moreover, when Company B was acquired, we found a great need for additional help but also found we could not afford it, as the new company's sales volume was small. We were then faced with the challenge of maintaining adequate accounting records for both companies, of providing a great deal of cost information, and of supplying reports, charts, and graphs to management, with the same small office staff. Furthermore, our office personnel needed a great deal of additional bookkeeping and accounting training.

We do not use machine bookkeeping, because the work-load consists of many different operations. Adapting these diverse operations to machines would be prohibitively expensive. Our solution to these problems was the establishment of identical journals and work papers for the companies, to promote the easy flow of accounting data. Variations in costing methods are the only fundamental differences permitted in the accounting for the two companies.

Adapting the Journals

Each company has five journals, i.e., cash receipts, cash disbursements, sales, purchases, and general journal. The cash receipts, cash disbursements, and purchase journal are conventional in their setup. A feature of our system, however, is that all information needed for accurate posting is inserted on the posting media (remittance advices, suppliers' invoices, etc.) by use of rubber stamps. This is to organize the information. Accounting distribution is indicated by the accountant on the posting medium. With very little guidance, either clerk can make the entries without any further help and when the time is available for doing it. The clerk is required to initial the items posted so that, in the event of error, the proper person can be approached for explanation or correction.

The sales journal was set up to provide information needed for renegotiation and for management reports. The work was arranged so that all pertinent information is available at the time of the original entry. This includes the amount of the sale, the type of sale, and the amount of profit on each job. We consider that showing the job profits in the sales journal is very important. It is accomplished by having the cost clerk record the job cost at the time of invoicing, when the job cost sheets are also closed. (This procedure is used for Company A only, since Company B does not maintain job cost records.) Sales reports for management are prepared showing sales by types, by customers,

and in total. The profit or loss on total sales to each customer is also shown. Totals are available from the monthly sales reports and are accumulated on customer cards so that yearly reports may also be made with little additional work. The reports can be prepared by any one of the office staff who has the time. We know the sales volume and percentage of profit or loss for every customer we have had since the establishment of these records. After the initial setup of customer cards, maintaining of these records has meant only adding the current totals at year end to the previous accumulated figures.

The general journal was set up in the "repeating entry" style, with all the entries typed prior to the start of our year. This eliminates monthly work except to insert the proper figures as they become available. In the case of the entries which do not vary from month to month, all twelve monthly figures are filled in at once. Repeating entries are used for payroll figures, payroll taxes, indirect labor, accruals and bank charges.

Work Papers, Closings, and Regular Reports

Before the beginning of each fiscal year, full sets of work papers are prepared and are available for the accountant when needed. As an example, payrolls are recorded on the payroll worksheet each week. Payroll figures are thus always current and can be totaled for journal entries the day following the final pay period. The payroll worksheet is shown as Exhibit 1.

PAYROLL SUMMARY WORKSHEET

Accounts	Week ending 2-1* Paid date 2-5	Week ending 2-21* Paid date 2-26	Monthly Totals Debit	Monthly Totals Credit
Direct labor	$5,411.40	6,158.52	22,268.96	
Executive salaries	1,050.00	1,050.00	4,200.00	
Office salaries	150.00	150.00	600.00	
F. O. A. B. taxes	62.63	57.71		247.65
Income tax withheld	979.36	1,125.04		4,071.37
Hospital insurance	58.60	60.40		244.20
Due from employees	45.75	98.00		273.07
Cash from bank	5,431.99	5,989.08		22,098.27

*Columns for weeks ending Feb. 7 and 14 omitted.

Indirect Labor		Accrued Payroll	w/e 2-28	Feb.	Total Debit	Total Credit
Engineering salaries	$ 621.60					
Indirect labor, other	-0-	Engineering sal.	$ 185.00	$ 74.00	$ 259.00	
Janitor services	123.75	Direct labor	5,648.28	1,949.43	7,797.71	
Premium labor	2,299.15	Executive sal.	1,050.00	420.00	1,470.00	
Machinery repairs	74.20	Office salaries	150.00	60.00	210.00	
Building maintenance	-0-	Accrued wages				$9,736.71
Direct labor	$3,118.70					

EXHIBIT 1

Information for management reports is recorded as soon as the data becomes available. Exhibit 2 shows a portion of the figures which are kept always available for report purposes. In addition to the special report information, work papers are prepared for the monthly financial statements. The trial balance is

WORKSHEETS FOR MANAGEMENT REPORTS

Worksheet for Recap of Sales and Hourly Return Per Man Hour Worked

	Last Year			This Year		
	Hours Sold	Total Sales	Sales Per Hour	Hours Sold	Total Sales	Sales Per Hour
January						
February						
Cumulative						
March						
Cumulative						

Worksheet for Burden Rate Determination

	Man Hours Sold	Selling Expense		Administrative		Factory Overhead		Total
		Total	Per. Hr.	Total	Per. Hr.	Total	Per Hour	Per Hour
January								
February								
2 months								
March								
3 months								

Recap - Indirect Hours Worked

	January	February	March	April	May	June	July	etc.
Unclassified								
Janitor service								
Repairs to machy.								
Premium labor								

EXHIBIT 2

taken directly from the ledger in the same form as the finished statements. Any necessary adjustments are made on the work papers, balanced, and totaled on the side of the sheet. The previous year's figures, which are used for comparative purposes, are inserted from time to time as "fill-in" jobs. Typing of the financial statements is simple, since no rearrangement is needed before typing.

In conjunction with the monthly financial statements, we furnish to our management certain other information on balance sheet comparisons, sales by customers, hourly return per man-hour worked, and makeup of the burden rate. In order to facilitate preparation of these reports, mimeographed forms are prepared, so that we need to insert the figures only on each month's report. The figures are taken directly from work papers, and are typed in triplicate so that each director has his own copy for study. Comparative figures are shown wherever possible. Exhibits 3, 4, and 5, illustrate these monthly reports, (and Exhibit 7 to which specific reference is given later).

Special Reports to Management

In addition to general and cost accounting information, the accountant also has the responsibility of presenting management with special reports when the need arises. Selecting the proper media for presenting accounting information then assumes prime importance. We are continually seeking the presentation

BALANCE SHEET COMPARISONS

Distribution of New Profit:	March 1957	March 1958	Increase (Decrease)
Operating capital	$ 57,164	$ 57,521	$ 357
Buildings, machinery, equipment	134,005	132,115	(1,890)
Long term liability	17,086	14,686	2,400
Net profit			$ 867

Ratio - Current Assets to Current Liabilities	Last month	This month
Current assets	$150,816	$137,851
Current liabilities	92,559	80,330
Ratio	1.63	1.72

Capital Stock - Book Value:		
Original price	350 shares, no par value	$ 50.00 per share
Recapitalization, Jan. 1, 1958	350 shares, stated value	100.00 per share
Book values:		
Jan. 1, 1958	350 shares, no par value	497.38 per share
Feb. 28, 1958	350 shares, no par value	499.86 per share
Increases:		
Six months to Feb. 28, 1958		2.48 per share
Month of Feb. 1958		1.38 per share

EXHIBIT 3

which will be most effective in a particular situation. Most accountants have known the frustration of having laborious efforts on a difficult report com-

RECAP OF SALES (February)

Customer	Total Sales	Job Profits	Profit Percentage	Number of Items sold
Company A	$33,417.37	$6,280.18	18.7%	114
Company B	6,873.84	721.00	10.4%	11
Company C	21.00	3.62	17.2%	1
Company D	36.00	7.22	20.0%	2
Company E	4,265.60	303.96 Loss	7.1% Loss	8
Company F	33.60	-0-	-0-	1
Company G	471.04	97.86	20.7%	3
Company H	10.44	.90	8.6%	1
Total	$45,128.89	$6,806.82	15.0%	141
Previous Month Total:	$38,420.18	$5,301.67	13.7%	106

EXHIBIT 4

pletely ignored. Only the accountants seemed to understand the importance of the figures shown! In our organization, management never disregards accounting information on the basis of personal whim. However, unless the report is understandable and clearly shows the problems involved, our management, too,

HOURLY RETURN PER MAN HOURS WORKED

	Last Year			This Year		
	Man Hrs. Sold	Total Sales	Sales per Man Hour	Man Hours Sold	Total Sales	Sales per Man Hour
November	6,721	$ 40,173	$ 5.98	6,991	$ 35,691	$ 5.11
December	6,594	34,095	5.17	6,299	29,651	4.71
Cumulative	13,315	74,268	5.58	13,290	65,342	4.92
January	4,751	31,508	6.63	5,316	39,482	7.43
Cumulative	18,066	105,775	5.85	18,606	104,823	5.63
February	6,313	37,303	5.91	4,864	32,111	6.60
Cumulative	24,379	143,078	5.87	23,470	136,935	5.83
March	6,068	36,017	5.93			
Cumulative	30,447	179,096	5.88			
April	6,612	37,601	5.69			
Cumulative	37,059	216,697	5.85			
May	6,254	43,271	6.92			
Cumulative	43,313	259,968	6.00			
June	7,548	40,418	5.35			
Cumulative	50,861	300,386	5.91			
July	5,512	37,013	6.72			
Cumulative	56,373	337,399	5.98			
August	5,945	48,597	8.17			
Cumulative	62,318	385,996	6.19			
September	5,438	55,310	10.17			
Cumulative	67,756	441,306	6.51			
October	5,841	58,059	9.94			
Cumulative	73,597	499,365	6.79			

NOTE: Material used was removed from the monthly sales figures before computing hourly return.

EXHIBIT 5

will fail to "get the message." When personalities are not involved, it is up to the accountant to find the medium most effective for the specific problem. Three examples of such special reports are presented in the paragraphs which follow.

There is a special report on factory profits (Exhibit 6). High-cost areas make it necessary to keep close correlation between sales and costs. In the labor market, the jobbing shop must complete with large concerns which can offer much more stability and job security to the worker. The small shop must offset this factor by offering higher compensation. Usually this higher compensation is the result of overtime work. The premium paid for overtime hours must be absorbed in overhead. During especially busy periods, when much overtime work is required, this item causes factory expenses to soar. More than one company has closed its doors because it failed to control this expense. Another important element of overhead is the cost of small tools and supplies. During one particularly high-volume period, we often discussed the effect these items had on the factory profit. However, our discussion had little influence as long as management presumed that all such expenditures were necessary. In order to present the picture more forcefully, the graphs shown in the upper half of Exhibit 6 were prepared. We began the preparation of the graphs during the second month of the year and continued for the rest of the year. Early in the year a dangerous situation was revealed. As costs were then brought under control, the resulting progress was emphatically evident from the course of the charts during the remainder of the year.

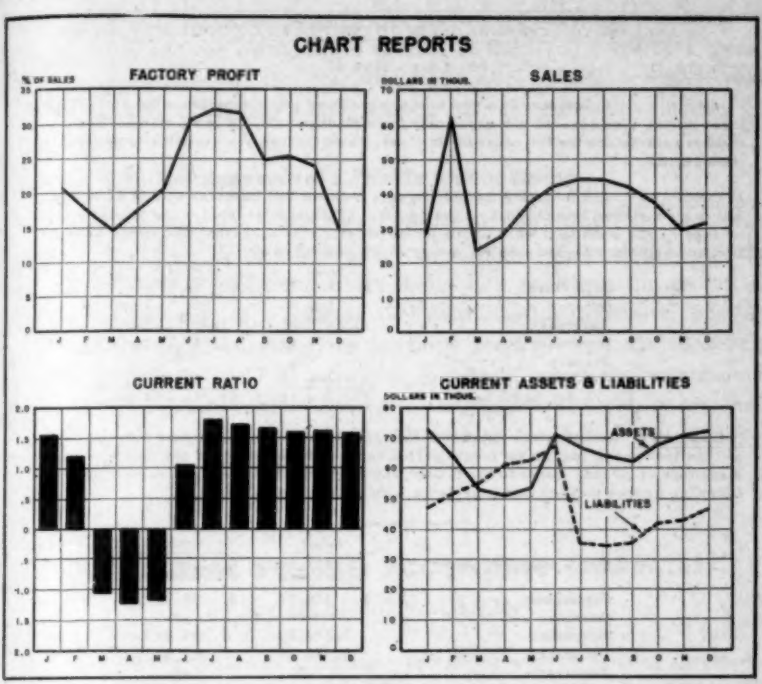

EXHIBIT 6

RECAP OF SALES (6 months)

Customer	Total Sales	Job Profits	Profit Percentage	Percent of Total Sales
A Company	$ 139.00	$ 52.57	37.8%	.11%
B Company	2,100.00	228.03	10.8%	1.68%
C Company	9,129.14	1,143.74	12.5%	7.32%
D Company	7,633.05	799.82	10.5%	6.12%
E Company	41,850.21	6,953.32	16.6%	33.58%
F Company	4,225.00	669.48 Loss	15.8% Loss	3.39%
G Company	151.45	24.00	15.8%	.12%
H Company	21.30	1.96	9.2%	.03%
I Company	457.95	36.88	8.1%	.37%
J Company	21,467.11	1,691.02	7.8%	17.22%
K Company	844.88	202.23	23.9%	.68%
L Company	47.41	4.13	8.7%	.04%
M Company	20,334.52	3,745.23 Loss	18.4% Loss	16.31%
N Company	12,733.04	1,492.85 Loss	11.7% Loss	10.22%
O Company	3,508.05	328.36	9.3%	2.81%
Total	$124,642.11	$5,558.50	4.5%	100.00%

EXHIBIT 7

ANALYSIS OF LOSSES ON SALES TO INDIVIDUAL CUSTOMERS (6 months)

F COMPANY Sales - $4,225.00: Loss - $669.48

F Company is a new customer with no prior experience for comparisons. Sales during 19xx covered one order only for a plastic mold. It is recommended that management determine the cause of this loss, as no figures are available to present to management.

M COMPANY The following monthly figures indicate that business with M Company shows a consistent loss throughout the period. All figures shown are for plastic molds or repairs and additional work on the initial order. It is suggested that notice be taken that orders from this company represent 16.3% of total sales.

	Sales	Profit
September	$ 1,827.50	$ 38.06
October	520.00	324.36 Loss
November	13,435.87	1,869.72 Loss
December	4,304.89	1,645.23 Loss
January	-0-	-0-
February	246.26	56.02
Six month total	$20,334.52	$3,745.23 Loss

N COMPANY All previous sales to N Company have shown better than average profit, and the loss shown for the six month period represents the effect of one sale where a large loss occurred. Sales to the N Company represent 10.2% of total sales. The following figures indicate our experience with N Company:

	Sales	Profit
Total preceding year	$20,477.60	$3,416.08
September	$ 528.00	$ 57.02
October	-0-	-0-
November	6,279.00	2,290.89 Loss
December	5,386.04	637.77
January	-0-	-0-
February	540.00	103.25
Six month total	$12,733.04	$1,492.85 Loss

EXHIBIT 8

In still another instance, we found that charts were the most effective medium or, to be more specific, over-expansion. Oral discussion, written reports, or financial statements did not dim the glow created by the dream of the proposed program. Then we presented the facts in picture form, showing the results of our spending on the current operating capital. The result was a complete re-study of the plan and a return to a sound financial structure through a long-term program. The lower half of Exhibit 6 is illustrative of the report which proved effective.

Very often charts are not detailed enough to give management the true picture of a particular situation. As we have mentioned, we prepare an analysis of sales and job profits by customers each month and on an annual basis. One report covering a six month period showed a number of losses which demanded explanations. Exhibit 7 is the report which started our investigations and

Exhibit 8 the report on our findings. We studied the individual sales involved in each case, and the circumstances peculiar to them and prepared a special report. Management was thus furnished with the information needed to make sound decisions in handling future business from the companies involved.

Living Up to The Accountant's Part In Management

It is evident that accountants play a greater part in management today than ever before. If we are to assume new responsibilities, we must also solve the problem of having sufficient time for them. It is no longer enough just to record the operations of a business. We must also have executive ability in planning the work, delegating the authority, keeping informed and getting results. In no other field of accounting is there a greater challenge than in small business. These modern techniques are mingled with old, so few individuals are responsible for so much, and pride in the profession is not lower because of the size of the business.

A SHORTAGE OF GOOD ACCOUNTING GRADUATES

by LEONARD A. OLSON*

THE NUMBER AND QUALITY of accounting majors being graduated from our colleges and universities has troubled me for a long time. I have also noted a discrepancy between published statistics on the supply of accountants and the demand for accountants as expressed by industry, government, and public accounting. According to the following table, the percentage of accounting graduates to the total number graduated from all fields shows a tendency to rise slightly over the years:

Degrees conferred as a Percentage of Total Degrees Conferred, Years 1951-1956

Major Field	*1951-2*	*1952-3*	*1953-4*	*1954-5*	*1955-6*
Accounting	2.58	2.42	2.55	2.74	2.84
Biological sciences	3.37	3.18	3.20	3.15	4.04
Education	18.97	20.18	19.41	18.52	22.68
Engineering	9.20	7.93	7.62	7.86	8.45
English	4.24	4.16	4.29	4.59	4.60
Fine arts	5.48	5.49	5.43	5.68	4.80
Healing arts	7.13	7.91	8.06	8.11	7.02
Physical sciences	3.66	3.42	3.37	3.66	3.75
Social sciences	25.59	24.84	26.07	26.92	28.04
All others	19.78	20.47	20.00	18.77	13.78
	100.00	100.00	100.00	100.00	100.00

Source: U. S. Department of Health, Education and Welfare

* Certified Public Accountant and Provost of Rider College, Trenton, N. J.

It would seem, therefore, that accountants are being graduated in increasing numbers. On the surface one might think this satisfactory. However, year in and year out, we hear cries from industry, government and public accounting firms for more good starting accountants. The answer to this contradiction is found, it seems to me, in two facts:

1. Industry is growing at a faster rate than we are training accountants.
2. We are not attracting to the accounting profession men of the calibre desired.

Between 1951 and 1956, the gross national product in the United States increased by 20 per cent. The number of businesses has increased by 185,000 or 4.5 per cent (even though 1,930,000 businesses have been discontinued.) In 1956 only 8,828 accountants were graduated. Considering that not all of these graduates enter the accounting field and that many of them are compelled to seek employment in other areas when they find they lack the ability sought by the profession, it becomes clear that only a handful remains to satisfy a very large demand.

The matter of quality is important. I think that, in practically all colleges and universities, accounting has been getting students, with few exceptions, from the sixtieth percentile on down. This condition stems, in part, from the fact that the general public and high schools in particular have not as yet recognized accounting as a profession. In high school when a student displays academic ability, he will be advised to pursue study of science, engineering, medicine, etc. On the other hand, if a student in high school expresses a desire to study accounting, he will be advised to take the commercial course along with any other subjects required for admission into the college of his choice. People generally fail to realize that the good accountant today is a well-educated man having had courses in the arts and sciences as well as training in the business subjects.

I believe that the colleges, working in the conjunction with the professional accounting organizations, should embark upon an extensive program of education, informing the public generally and the high schools specifically, of the real nature of accounting as a profession, the calibre of the individual who can qualify, his educational requirements, and the fruits of the profession. To give such a plan momentum, industry, and public accounting firms should offer scholarships to high school graduates who can qualify, and should subsidize accounting training in the colleges. It is granted that something along these lines is being done, but not to the extent necessary and it is already a little late.

Paper Company Meets Inventory Challenge With Better Product Costs

by JACK J. COOPER*

THERE IS A FLUID SITUATION IN THE AREA of paper mill accounting practices. Methods of cost accounting which were considered either impractical or unnecessary some years ago have now become urgently needed in order to keep pace with the growth of more complex and diversified product lines. A prime example of this in one company is its accounting for and evaluating of in-process and finished inventories. This is of vital importance in an accounting system which historically has used actual rather than standard costs for monthly operating statements. In spite of this special requirement, the application of modern data processing methods, plus imaginative use of the statistics which they produced, has enabled the company to reduce physical inventories (taking) from one-per-month to one-per-quarter without losing monthly inventory valuations. At the same time, extensive refinements have been made in the analysis and evaluation of a complex product inventory.

This company is an integrated, multi-plant operation producing items in many different paper categories, including coarse and fine papers, plain and printed, waxed and parchmentized, single sheet and laminated product packaging papers, and a full line of consumer specialty items. The normal in-process and finished goods inventory is equal to approximately a month's production at various stages of completion. It should be pointed out that the plant belongs to an industrial category best described as somewhere between a process and a job order industry. The product, although made by a standard process operation up to a point, is, nevertheless, customized for individual customer needs at some point in its manufacture. This is the reason that in-process inventory becomes much more of a problem than that in normal process industries where the product line, however lengthy, is subject to standardization from beginning to end of processing.

Less than five years ago the great variety of the mill's products, when considered as inventory-in-process, were condensed to separate categories of plain and print papers produced at each of two mills and of waxed, parchmentized, and specialty papers. Physical inventories were taken each month by these categories

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and the items were evaluated by average costs. At times when inventories were low and relatively static, when the product mix within these categories was stable and when the production each month was generally representative of the inventory content, the income statement and operating analysis were not seriously distorted by the over simplification represented by these broad product groupings. However, with the development of profit analysis, product analysis, and complete product costing, it became apparent that, regardless of the practical difficulties involved, a more detailed itemizing and evaluation of the in-process inventory was required.

Stage-of-Completion Costs; Inventory Predictions

Since a complete analysis of operations flow would be necessary for this, the job was beyond the scope of general accounting. Two experienced cost estimators, who had just completed operations analysis for use in product cost estimating, were assigned the task of developing from "scratch" a workable system of evaluating in-process and finished inventory by stages of completion. This, of course, had to be tied in to the physical capabilities of the counting of inventory by mill personnel and the correct identification of the product in its several stages. For several months this evaluation of the inventory was performed manually by these estimators using the established key component costs and tabulating them on each item of inventory at the cost center in which it was found. At this stage in the development of the inventory evaluation procedure, this company had progressed from five basic category costs to about 500, which represented several thousand individual items different from others in some, if minute, respect. A ready check of the accuracy of these costs was obtained by costing the monthly sales, using the same costs and comparing with actual cost of production.

A major result of the research thus begun for inventory costing was the knowledge gained merely by opening up the content of the in-process inventory in terms of product. As in all accounting innovations, in which a break is made from a long-accepted but inadequate procedure, the initial change in principle generated a continuing search for refinements in method. The possible gain from inventory analysis both as to dollar value and unit content would affect all phases of financial and manufacturing planning. While the opportunity was great, the difficulties were also formidable. More detailed costing necessitated more accurate counting, particularly on those physical inventories which did not have the benefit of the yearly outside audit. Selling the manufacturing people on the idea of more careful and more complete counting was not the least of the obstacles in the way. The measure of success in this respect could only be as-

certained by developing a method of predicting the relative amount of inventory in several broad categories so that the overall accuracy of the inventory counting could be verified. Hence, coincident with the refinement of the costing procedure, there was also developing a means of predicting the count to spot any error in the physical count.

In order to establish the need for rigidly inspected inventory-taking to use with detailed inventory pricing, the inventory analysts perfected a statistical input-output inventory control and tested it monthly for a 12-month period. The statistical method used to predict or forecast the inventory balances is unique in that it has no relation to the commonly accepted "book" or perpetual inventory procedures. There are no laborious stock transfer records or individual stock cards involved in the procedure. Instead, a key inventory analyst, working with other mechanically tabulated statistical items such as production reports, purchase records, sales reports, and the last previous physical inventory records, completes the statistical prediction of the inventory balance at the period closing. Compared to the monthly physical inventories, the statistical inventory was noticeably more stable. Using an audited physical inventory figure as the base, inventories were estimated for succeeding months. On the next opportunity to take a really thorough physical inventory, with the plant shut down and a complete audit check made, it was found that the physical inventory came into line with the estimated. On the next occasion, when such a comprehensive physical was possible, the physical again fell into line with the estimated.

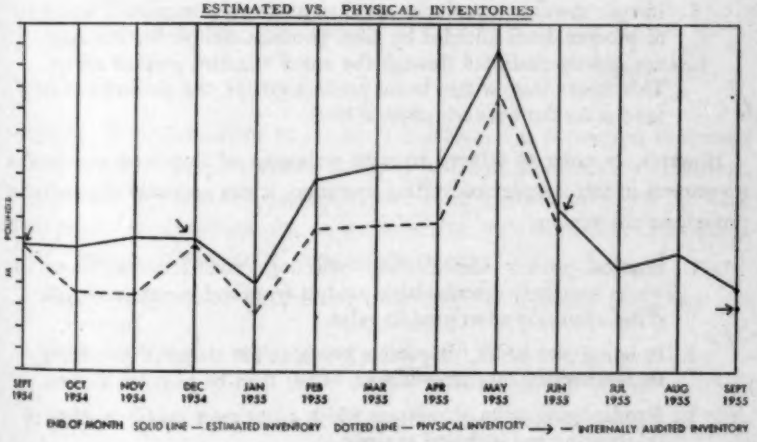

EXHIBIT 1

Quarterly Inventories, Rather than Monthly

It was at this point that the cost accountants went to management with the suggestion that monthly statistical inventories were preferable to monthly physical inventories unless rigid auditing was performed each month similar to that exercised at the year end. That is, the danger of distorting operating information was less when the statistical method was used. Monthly physical inventories were then dropped (shown by end of dotted line on Exhibit 1) and estimated figures used for interim months within a quarter. The first check against this system took place when a thoroughly audited physical inventory was again taken. The count from this physical inventory, compared with the estimates which had been made for three months without the benefit of any physical figures, showed a variance of less than two per cent between the two compilations. The inventory pricing and counting procedure now shapes up like this:

1. Three quarterly physical inventories and one fiscal year-end audited inventory are taken annually.
2. Monthly inventories are statistically predicted prior to the month's end and firm figures are calculated with final end-of-month statistics.
3. Physical inventories are counted and evaluated in maximum product detail; inventory is itemized to the limit of physical capabilities and priced accordingly through a machine calculating method which allows product identification to a maximum of 480,000 items.
4. Interim monthly inventories are calculated to the maximum degree of product detail afforded by sales, purchase and production statistics and are evaluated through the use of standard product groups. This means that, within broad product groups, the product mix is fixed at the last quarterly physical level.

However, in order to achieve accurate evaluation of in-process and finished inventories in this complex converting operation, it was necessary to standardize procedures concerning:

1. Practical product identification—selecting product nomenclatures which accurately describe basic product types and whatever variable distinctions may affect product value.
2. Isolating and costing in-process goods at the stages of processing through which they have flowed, rather than by physical location.
3. Standardizing units of measure which adapt most readily to physical counting and statistical analysis.

4. Accurate and centralized preparation of production and sales statistics so that data required for establishment of valuations, as well as control data for count-check, may be obtained.

Product Cost Differentials for Pricing

When accurate physical counts or detailed statistically accurate inventory records became available in this way, the inventory evaluation was refined and expanded to match the detail which was practical in the counting procedure. This method of evaluation is to cost in-process inventories at current material cost and "normal" converting rates. This is identical to the costing procedure for pricing the company's product on the sales market. The method has been extended to the point of establishing cost differentials among products in considerable detail so that changes in the content of the inventory may be reflected correctly in the total valuation. This tends to reduce the possibility of variations in inventory volume adversely affecting the period cost of sales figures. As the valuation became more and more sensitive to fluctuations in content mix the stability of the inventory valuation was more assured and the cost of sales was closer to the actual cost of producing the goods sold in a given period. As an example, the company produces a printed and waxed outer wrapper for cereal packaging customers. The cost analysts have outlined the following processes through which this product flows:

1. Papermaking
2. Supercalendering (smoothing the surface)
3. Printing
4. Waxing (applying wax coating)
5. Rewinding (cutting down size of roll to customer requirements and winding roll tighter)

Because of the limitations of inventory counting, it is impractical to attempt to count each of many customers' products found in the inventory. However, it is possible to count this particular product in a group of which the basic characteristics of all components are the same with regard to costs of producing. These "common denominator" characteristics are:

Type of paper used for printing wrapper	Coverage of printing and color used
Type of wax used as coating paper	Size of finished roll
	Packaging of finished roll

In order to price the product accurately in relation to other products, it is necessary to develop costs both of the materials used and of the operations

through which the product flows. These data are developed through the use of current usage of materials and current productivity at a normal level of operational activity. Data developed in the above procedures are stored by product material cost and processing operation cost per unit in the form of punched cards, to await combining with physical inventory count cards.

Disciplined Inventory Count Procedure

Supervision of the physical count of the in-process inventories, it was found, should rest with the same people who are responsible for the evaluation of the inventory and the statistical count-check. In this way the procedure for counting and the form, design and use of the inventory records may be determined by the requirements of the end use of the inventory, that of financial analysis. The counting is under the direction of the inventory analyst. Both quarterly and year-end inventories are carefully scheduled and prepared, with clear instructions delivered verbally to key mill personnel followed by written instruction sheets. New items of inventory are analyzed and tagged for inclusion in proper categories. A team of financial division personnel is assigned as roving advisors to assist mill personnel in correctly identifying items. Because exactly the same procedure is followed on each of the four quarterly inventories, the problem of briefing inventory-takers on unfamiliar details is reduced in complexity. Previously, a different procedure was used on the once-a-year audited inventory than on all other monthly counts, with the result that once again each year many forgotten details had to be brought to mind again. The details of a quarterly operation as less easily forgotten.

KVP INVENTORY

June 29 1957

Division W4X Dept. REWINDERS

06514 Inventoried By

Grade REG. PRINTO

Basis Weight 27 Color W

STAGE OF OPERATION

1 ☐ Raw Stock - Join This Operation

2 ☐ Plain } Not Finished This
3 ☐ Printed } This Operation

4 ☑ Plain } Finished This
5 ☐ Printed } This Operation

SPECIAL PROCESSING

1 ☑ None
2 ☐ Perforated
5 ☐ Squared
7 ☐ Perforated & Squared
4 ☐ Creped or Crinkled
9 ☐ Embossed or Textured
1 ☐ Waxed or Oiled
3 ☐ Perforated & Waxed
8 ☐ Squared & Waxed
6 ☐ Perforated, Squared & Waxed

Form

1 ☑ Rolls
2 ☐ Sheets

TOTAL POUNDS 24,265

14 ROLLS

EXHIBIT 2

The basic inventory record is a pre-numbered ticket with a carbon copy (Exhibit 2). Departmental designations as to area are applied before the tickets are distributed (in the case of this exhibit, wax rewinders is the designated area.)

A close check is kept of all the serially-numbered tickets given to the inventory takers in each area and all used and unused tickets must be accounted for when the inventory is completed. The inventory-taker applies the grade, basis weight, and color data, then checks the applicable stages of processing, and indicates the tonnage. Similar material located in physically adjacent areas may all be put on one ticket, as in the case of the 14 rolls in the exhibit. Tabulating codes are applied by the inventory analyst team after the physical count is completed. This not only insures accuracy of the most complicated and most important items bearing on costs, but also provides a final check on all other detail on the tickets before it is too late to reexamine questionable items.

Completed inventory tickets are key-punched and combined with pricing decks to calculate the period inventory count and valuation. The entire procedure, both as to pounds and dollars, is a mechanical one from this point on. The results are several summaries of components of the inventory in terms of units by cost centers, costs by material and processing components, and by degree of finishing. Techniques involved in the tabulating procedure for extending inventory weights to determine tonnage by grades, grade groups and material components, as well as for detailed pricing and evaluation, are basically standard for this type of application. Since this company utilizes punched card accounting methods for sales analyses, maintenance stores and labor distribution and production reporting, this inventory application was a logical complement to these procedures.

Coping with Circumstances Imaginatively

In summary, this company has taken advantage of modern mechanical data processing not only to process inventory but also to properly analyze inventory content and valuations, through the use of speedily processed statistical data from other sources. The results of this statistical double-play have been not only significant cash savings in man-power at inventory periods but also vastly improved operating information as well. This experience seems to indicate that the real value of data processing installations, whether mechanical or electronic, integrated or isolated, is in the imaginative application of the results to other challenging problems.

MANY STAFF GROUPS IMPLEMENT PRODUCTIVITY

by FLOYD M. RUNDLE*

WHENEVER WE HEAR OR READ about "cost reduction," we are confronted with statistics intended to prove important gains in efficiency in industrial operations. The layman is led to conclude that the build-up of the white collar force is related to a behind-the-times method of doing accounting work. Who among us will use the available ammunition to combat these misleading data?

We must admit that rapidly expanding industry, diversity of operations, mushrooming statistical reporting, additional "welfare plans" and governmental embellishments of one kind or another, have added to the Topsy-like growth of the clerical force, in spite of the accountants best efforts to minimize this growth. However, we should be prepared to clarify the entire complex situation and to show that not all of the growing white collar force is due to accounting. Here are five growth areas which quickly come to mind (there are, no doubt, many more):

1. A growing group of white collar workers are made up of those who now keep vital statistics concerning the very machines that have made industrial workers more efficient. Their efforts produce maintenance records, performance charts, parts replacements schedules, not to mention more adequate fixed asset records.
2. Methods groups of all descriptions have been organized to improve industrial operations.
3. Training staffs for indoctrination and development of more effective industrial workers have been expanded.
4. Personnel forces have grown to implement dozens of industrial relations plans and to develop others.
5. Clerical groups have sprung up "all over the place" to relieve operating supervision of paper-work time.

It is not my purpose to debate the necessity for any or all of such groups. Let us assume for now that vital needs are being served. The point is that a large segment of the expanded white collar force performing new services for industry cannot be blamed on the accountant. Will someone initiate a study to prove it? Perhaps it will include positive findings which would disclose accountants to be an increasingly productive element in the economy.

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Large Opportunities in Accounting For Small Business

by C. OLIVER WELLINGTON

THE NEW AND DRAMATIC DEVELOPMENTS in data processing and in highly refined management control techniques are applicable only to large businesses, for small business cannot afford this expensive "hardware" or a large executive staff. Nevertheless, there is a need for the improved application of accounting to small business and there is much that can be accomplished.

The small businessman may not be able to justify the latest technology in office, plant or store, but he does have certain advantages when competing with large organizations. The small business can be more flexible. It can offer specialized service and adjust to the customer's requirements without major revisions of policy, and frequently without going through many channels. Imagination can be used most advantageously in the small business. Its personnel can recognize an opportunity and act upon it quickly and effectively. Management personnel can keep close to the operations and can judge trends, customer satisfaction and the abilities of personnel directly without relying solely on the opinion of subordinates and upon reported information. Accordingly, a small business operating in a limited geographic area or a limited type of market is frequently more aware of market conditions than the larger organizations. Further, management can know its people and, through a tightly-knit organization, can create a real and honest sense of "belonging." The long-term success of a small business generally demands that these advantages be used to the fullest extent.

Even within a uniform definition of size, such as sales dollars, number of employees, etc., businesses vary significantly in complexity. These comments are directed primarily at businesses that have grown to the point that the owner or manager can no longer effectively exercise control by walking through the plant and by negotiating all purchase contracts and sales orders himself. The small business I have in mind requires that some information be forwarded to management by reports and relies on some degree of organization. Cost and

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profit making decisions are, to some extent, made by persons other than the owner or the manager.

The foregoing reference is in recognition of the tendency of the typical small business to be dominated by one individual. The importance of one man is both one of great weaknesses and great strengths of a typical small business. Such a man frequently has outstanding talent. He may be an engineer whose ingenuity has designed devices which created the business. He may have a sales background and the ability to "sell anything." Only in the rare case would he be trained in accounting or be, by nature, accounting-minded. When this man has built the business on the basis of his most outstanding skill, he will be tempted to pay little attention to its other aspects.

Unfortunately, he frequently thinks of accounting only as record-keeping overhead, which he reluctantly accepts, and of the accountant as only a bookkeeper. If accounting is to make an effective contribution to the enterprise, this image must be changed. The accountant in a small business must be, first of all, a businessman with a general grasp of the operation of the business and of the elements which are most essential to its success. Only then can he be an effective specialist.

What Does Management Need to Know?

It is unfortunately true that in many businesses the accounting function is primarily concerned with keeping historical records. In order to make a full contribution to a small business, the accounting function must be designed to produce information which can be used by management for effective planning and control of its operations. The exercise of control involves the procedure of measuring actual results against some idea, plan, past performance or standard. It always exists in some form, no matter how imperfect. Any small contractor, such as a painter or carpenter, even though he keeps no records, knows what he wants his men to do on a job, and about how long it should take them. Control is inconceivable without some such guide or plan against which the results can be compared. The exercise of control basically involves:

1. Measuring results against some standard, plan or goal. The standard may be past performance or future expectations reduced to something concrete in terms of dollars and units.
2. Fixing responsibility for results.
3. Action on the part of those responsible for operations and expenditures.

Whenever a management control accounting system is planned, it must be designed to fit the real needs of management. In a small business, this point

becomes even more important, since we are usually dealing with a specific individual of definite likes and dislikes. We must recognize that a good control system is one that is used by management. If the personality of our key man is such that the information we plan to produce will not be effectively used, nothing will be gained from the system. This is not to say that the accountant should not compile the necessary data but, basically, the system must be suited to the personalities of the key men.

For example, accountants have developed terminology which enables them to express complex concepts in short phrases. If management just does not understand "favorable volume variance," why not call it "gain from the use of equipment at a higher level than anticipated." A cash flow statement may be more readily understood than merely an income statement. If management feels uncomfortable with figures, graphic presentations can be used to advantage. If labor constitutes the major item of controllable expenses, perhaps we should simply report labor data—such as actual and standard hours, labor cost in total, or actual labor cost per unit of product—rather than also to itemize supplies and other cost elements. In short, we should consider all devices which will present the facts to management so that they will effectively use them. The art in designing such a system lies in recognizing which information is most relevant and which methods can most effectively be applied.

The growth rate of the business is another major consideration. Many small companies, particularly in fields such as electronics, experience rapid growth and high profits for the first few years of their lives. Many of these apparently highly successful enterprises then begin to lose money and fail. Often a reason is that the rate of growth has greatly outstripped the development of management controls. The small company that will some day grow into a large company is well aware of this and has begun to develop management controls before the lack of them creates a major problem. Hence, when a management control accounting plan is being designed, the anticipated growth of the enterprise should be considered. Obviously, it is much more desirable to anticipate the need rather than determine it from a drop in profits! The same type of foresight should be applied to the consideration of anticipated changes in the nature of the business.

Budgeting and Small Business

The technique of management control most universally applicable is budgeting. Although budgeting is used by many more large companies than small ones, the need is often greater in the small company. Just to put plans into

execution, the large company must have them reasonably well thought out, since many departments and individuals are involved. The typical small businessman is not forced to formalize or communicate his plans to the same extent. He generally has objectives for the business outlined in his own mind but, if he fails to formalize them, he often finds that the final results are less than expectations because he has made decisions which are inconsistent with his basic objectives. He may, for example, have failed to anticipate financing requirements and may have authorized expenditures which make the profit objective unattainable.

Budgeting is applicable to all types of businesses, since all businesses plan, spend money and receive income. The type of budget to be used depends on the nature of the business and the management. A flexible budget will, in most instances, more accurately reflect and assist in operation than a fixed budget. The latter, however, can be used very effectively for planning purposes under certain circumstances, and even for cost control. It is far better than no budget at all. In either case, the comparison of actual results measured against the budget will highlight the points at which our plans were inaccurate or our actions did not agree with our plans. Management is then in a position to analyze these further, in order to adjust future plans or to take corrective action on the situation.

Although cost control is an important function of budgeting, the main value of budgets for small businesses is in requiring management to record plans and objectives and to convert these plans and objectives into dollars. This soul-searching process can be most enlightening. It will often reveal that an objective will not be achieved unless special steps are taken, and it permits this action before it is too late.

The creation of cost consciousness among the responsible members of the organization is another important gain to be made through a budgeting program. A deficiency in control may exist for a long period of time unnoticed but, when its effect is expressed in dollars, action is often taken. Even if no reductions in the present cost levels are achieved through a budget program, the issuance of cost data to key men works to control "creeping overheads." It is much easier for a supervisor to say to himself and to management that another employee is needed if he is not asked to think of the effect on the company's cost and profits.

Fitting Cost Accounting to the Type of Business

Cost accounting is often thought of as applicable only to manufacturing businesses, but there are many other areas for its application. It is certainly

important for a direct mail house to know the cost of typing and mailing letters prepared by present and alternative methods. There has even been more attention lately to the application of cost determination to retailing—a field which has always thought in terms of total department or store costs. Classes of items have traditionally been sold at a standard mark-up. However, when this mark-up is applied to items, we find a very large difference between the dollar margin received on low-priced items compared with the high-priced ones.

A furniture store, for example, may have a margin of $10 on a lamp and of $100 on a sofa. Does this difference in any way reflect the difference in the cost of getting each of these items into the hands of the consumer? The discount houses obviously do not think so, for they have been disregarding the mark-up pattern quite effectively, much to the consternation of the traditional retailer. This is not an easy problem and will not be resolved quickly. It may very well be a justifiable expenditure of time for those concerned with a retail business to make some investigations into the cost of selling various items.

It does remain true that cost accounting is most applicable to manufacturing and has developed mostly there. With budgeting, it combines to form one instrument of management control. In addition, good cost accounting must provide product costs both for purposes of inventory valuation and for control of products. Control of products means maintaining the most efficient apportionment of company effort as between various activities, products or lines. There are two aspects to this. One is determining what products the company can make and for how much. The best profit results will come by keeping the proper balance between the two considerations.

It is obvious that a company must have product costs for inventory, which are substantially accurate, include all costs and expenses except those due to variances, and recognize all the real cost differentials between products. It is not so clearly understood that those product costs can help in deciding what to sell and for how much. Very few concerns can set whatever selling price they desire. Usually, the sales department will say, "We know we are not making much on this product but we have to meet competition." The obvious answer is to try to sell more of the most profitable products but—and here so many cost systems fail—if the costs are not sufficiently accurate to truly differentiate between products, the sales department may be led into promoting unknowingly the sale of relatively unprofitable items. Whether you believe your sales prices are set by competition or not, good product costs can contribute to product control and to profits control.

Standard Costs and Small Businesses

Many accountants for small business appreciate the advantages of standard costs, but are afraid to use them because they believe them to be too complex and expensive in operation. Of course, standard conditions must apply in order to effectively use standard costs. With this one reservation, at least some standard cost principles can be used by most manufacturers. Many shortcuts to reduce clerical work can be applied. Some of these shortcuts theoretically reduce the accuracy of the cost procedures but, since we are not dealing with an exact science, we can still apply them if we first determine the possible size of the inaccuracy and evaluate whether it is immaterial enough to be disregarded. Average wage rates, for examples, can often be used within a department or group without significant distortion. Penny elimination can be used by carrying only even dollar amounts in our expense accounts and by throwing the cents into a penny elimination account.

Modifications of the complete standard cost plan can often be used. Purchase price standards and the resulting simplicity of raw material inventory valuation are applicable to many businesses. Standard hourly cost rates can be used in a job cost situation where it is not desirable or practical to set standard production rates. If a product consists of a group of relatively standard parts combined with special parts in order to meet the variations of the product required by customers, a standard cost system can be used for the specials and final assembly work. We have had occasion to apply "average standard costs" to businesses where each product within product line groups varies slightly to meet customer specifications.

This is a situation which is not uncommon in the electrical and electronics industries. Operating a complete standard cost system may require review of many parts and assemblies to determine the applicable standards, since a new group of part numbers is often issued to describe the minor product variations. For example, using a slightly longer bolt on a subassembly may create a new subassembly part number, a new intermediate assembly part number and a new final assembly part number. In many engineering drawing numbering systems, the nature of the simple change is not clear from the new part numbers themselves. We must now review these parts to determine the applicable standard and record it in a manner that can be used by clerks to apply to reported production.

If the cost significance of these differences is small and we are faced with a great number of them on orders of relatively small size, the cost of maintenance of our standard cost system may become disproportionate. This problem can sometimes be handled by disregarding these minor variations and using an aver-

age standard cost. Such a procedure, of course, has some real dangers. We cannot measure production efficiency as accurately as if we reflect all variations. If we only assume that the variations are minor in cost (when this is not the case), we may produce cost information which is unsound. Even if our assumptions are sound today, the product mix and the nature of the product itself may change as time passes, and the assumptions may no longer be valid. This is a technique, therefore, to be used with great discretion and judgment.

Telling the Truth Through the Cost System

No cost system can show results if the data in the basic records are wrong. Errors can creep into the system of even a well-controlled company. In a paper mill, we noticed some inconsistencies between the materials charged into process and the production made on each of several paper machines. Investigation revealed that, in order to relieve a critical production situation, the engineering department had installed a pipe line from one machine to another which was used to transfer excess material between the machines. Erroneous cost reports had been turned in for several months.

Similar errors may be noted in valuations of plant and equipment, distorting depreciation and operating costs. In one instance, two similar machines were being used on the same operation and product. One was new and the other had been purchased in the middle thirties. The cost of the new machine was twice that of the older one. In developing burden rates for the two machines, the company used actual costs as the value basis for allocating depreciation, taxes and insurance. The result was that, while there was little difference in the production of the two machines, there was a marked difference in burden rates. The foreman, though not responsible for fixed charges in his department, knew of the difference in rates and, not understanding why it existed, assumed it cost the company more to operate one machine than the other. The result was that the new machine was frequently idle and the old one was kept running, with frequent repairs and adjustments.

Errors of this type are not rare. With most companies using historical costs in their valuation of plant and equipment, there are many distortions. Fixed charges play an important part in the long-term policies and success of a business, since they must be recovered through the selling prices of the products. With the marked reduction in the value of the dollar that has taken place dur- the last twenty years, historical costs give misleading cost information. To eliminate this, the more important items of plant and equipment should be studied and valued for purposes of determining fixed charges at what we may call current productive values.

The Costs of Management Controls

There is a natural and sound reluctance in many small businesses to add to the costs of management by producing control information. It is true that all expenditures of this type should be justified by the anticipated gain, but we must avoid assuming, without careful consideration, that a control device will not pay its way. The sound application of improvements in systems and procedures will often make such practical and will frequently succeed in reducing office costs for existing operations. The small business can even use integrated data processing. Whenever we utilize our original source document for a multiplicity of purposes, we are processing data in an integrated manner. Carbon paper is an example, Translucent masters, spirit duplication, the preparation of order masters in the field by salesmen, and many other methods are also instances. It is not necessary to employ computers or punched tape in order to apply the philosophy involved.

Although there are many items of accounting equipment which can be used effectively by small business, such as edged punched cards, bookless bookkeeping, and bookkeeping machines, good procedures depend primarily on thorough analysis and the application of imagination rather than on equipment. Since few small businesses can justify a system and procedures staff, individual departments frequently determine their own procedures, with resulting duplication and inefficiency. The appointment of one executive to act as a coordinator for systems and procedures is sound organization for almost all businesses. The accountant, as a logical candidate for this position, must strive to be aware of the alternative methods available for solution of a problem.

The procedures used by many small businesses were installed because a particular equipment or systems salesman arrived when a problem was being considered. Rarely has adequate thought been given to other possibilities. Frequently, too much reliance has been placed on the salesmen's skills. There is no doubt that the companies in the equipment field have made significant contributions to techniques for processing data, but it must be remembered that the salesman's prime responsibility is to sell his products and that one cannot expect him to perform as a management consultant. To obtain the most successful use of business equipment and systems and the most help from salesmen, company personnel must clearly define the job to be done and use the salesman's knowledge of his own product to supplement their grasp of the problem.

The Accountant and the Company's Success

Since the small businessman is not usually trained in accounting, the accountant has an important function to perform in assisting the manager in understand-

ing the financial statements which record the results of his operation. The element of depreciation, in particular, tends to confuse the non-accountant. There is a tendency for small businessmen to think of earnings in terms of cash and to conceive of depreciation as a device for the reduction of income taxes. This type of thinking has been encouraged by the inflationary circumstances of recent years when machinery in use for a long period of time could sometimes be sold in the current market for more than its original purchase price. The accountant for a small business is faced with an important job in creating in the minds of management an awareness of depreciation as an expense.

Accounting analysis techniques have many applications to the problems of management. The accountant can perform an important function by considering a proposed decision in financial terms and expressing the effects on profit of alternative plans and suggestions. He can point out the volume of sales required to operate under proposed expansion and can determine the net effect of proposed investments. He can be of great assistance in pricing decisions, not merely by presenting cost figures but, also, by demonstrating that different price levels will have different effects on both sales and profits. Action taken by competition to meet a decreased price level will often mean that the proposed higher volume will not be achieved. However, in businesses where there is a high degree of product differentiation, changes upward or downward can often result in increased profits. The accountant, armed with the information produced by his cost accounting and budget systems and his knowledge of the business, can often be of great assistance in demonstrating the possible effects of these decisions.

Contributions of this sort to the problems of management require that the accountant have sufficient data to make the analyses. We have already discussed some of the systems used to provide this type of information and also to provide information directly to management for control purposes. We have shown that these controls can often be an effective aid to management in increasing profits. They tend to increase the importance of the accounting function in the business. We must be careful, however, to avoid short-sighted self-interest. We must design our control procedures so that they fit the business. We must recognize that, for all its deficiencies, the business which is run in the "hip pocket" of the owner-manager may often achieve "management control" at the lowest possible cost. As we add techniques of cost accounting, budgeting, production control, material control and the like, we use costly space and add the expense of people and equipment.

For the very reason that a company would not normally abandon its success-

ful efforts in cost accounting and budgeting and other control techniques for a small cut-back in business, we must be aware that, when we install them, we are raising fixed costs and must proceed in a practical manner. Each installation, of itself, may have no important effect on the expense structure but a combination of several procedural installations may often be significant in its impact on cost. We must also keep in mind that these techniques tend to make operations more formalized. If a key advantage of the business is its flexibility, care should be taken to avoid installing control systems which will limit that flexibility.

It must be remembered that control is not a problem to be solved on paper. It is a human problem. Part of that problem consists in knowing what action to take, in knowing the "significant facts" and being certain that they are not miscellaneous lots of more or less useful information but are necessary for the purposes of securing real control. When there is in operation a control plan designed to fit the needs of the business, management can be assured of the effective execution of its plans. This result will be greatly aided by a control of expenses by comparison with a budget. Weekly and daily reports of selected key items, such as direct and indirect labor, materials and production, will add to effective control. Cost accounting itself can be designed to provide management control information which is complete enough to form the basis of decisions. An intelligent approach to procedures can minimize the costs of obtaining this information. When accounting is applied to a small business in this manner, the result can be achieved that was well expressed by one manufacturer in saying, "My entire organization has become cost conscious."

Better Accounting for Fixed Expenses In a Seasonal Business

by PHILIP KREGER

SEVERAL YEARS AGO I was associated with a company which manufactured aluminum awnings. In addition to the factory in Buffalo, there was a retail sales room there and one in Long Island. We also had a wholesale sales department which sold to distributors and dealers throughout New York State and Pennsylvania. The business was highly seasonal at retail and wholesale levels.

The company ran into a problem which, I think, is prevalent in all seasonal businesses. We reached our volume peak in July and, after some drop in August, the remainder of the year represented months of exceedingly low volume. About the middle of August we would come up with an interim statement of earnings which might show a profit of $70,000. Since we would be operating at below the break-even level thereafter, I always added a footnote giving my estimate of how much we were going to lose in the remaining five months, so that the board of directors would not get too excited over earnings to date.

Still, this did not seem to me to be sufficient. Since this loss for the remaining period might be as much as $30,000, I always felt that the accounting presentation, although in keeping with generally accepted accounting methods, was just playing tricks instead of giving out factual information which could be used as a guide by management. I tried to develop a method of presentation which would anticipate the year-end losses in our monthly presentation during the peak months.

First, let me give some of the statistics. These are not actual figures, but are merely representative. On Exhibit 1, I have charted the average monthly volume in terms of percentage of total sales volume for the year. Also charted is the cumulative sales percentages. Our peak was reached in July, our August volume was considerable, but the balance of the year showed negligible volume. We treated our retail outlets as if they were distributors and billed them at wholesale prices. Thus the chart represents the activity of the factory at the wholesale price level.

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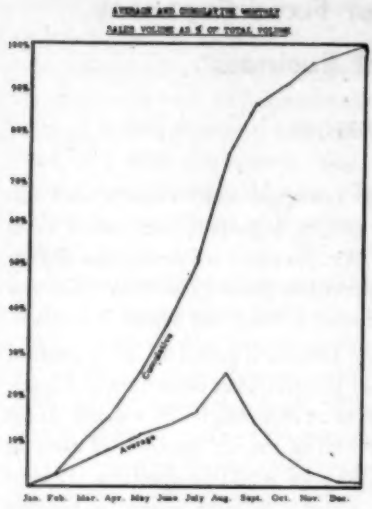

EXHIBIT 1

All Expenses Made to Follow Production

Treatment of rental expense will serve to start an explanation of the approach taken. Although we paid a monthly rental of $1000, our rent cost was not $1000 a month but $12,000 a year, which should be allocated to each month in accordance with its ability to absorb costs, based upon its monthly volume potential. We might have used the approach of standard costs and reasoned that, since we paid $12,000 per year for rent and expected to produce 360,000 square feet of awnings during the year, our standard costs for rent was 3.33¢ per foot. By budgeting all administrative and selling expenses we could arrive at a standard administrative and selling cost per foot. The actual expenditures for each month could be charged first to an asset or prepaid expense account and then charged into costs at a fixed rate per foot. However, this device had one major defect. If we were to underproduce during a given month, that is, produce less than our budget production for that month, the effect would be to build up an asset of unamortized costs which would tend to overstate the monthly earnings. Similarly, overproduction would tend to overstate the expenses.

Something else was needed. We reasoned that, since we expected to produce

FIXED COST ALLOCATION TO MONTHS ON SALES VOLUME %.

SALES		% of Annual Production	Footage	Variable Expenses	Fixed Expenses Percentage-wise
$18,720	January	4	14400	$ 9936	$ 6912
23,400	February	5	18000	12420	8640
32,760	March	7	25200	17388	12096
42,120	April	9	32400	22356	15552
56,160	May	12	43200	29808	20736
70,200	June	15	54000	37260	25920
102,960	July	22	79200	54648	38016
56,160	August	12	43200	29808	20736
28,080	September	6	21600	14904	10368
18,720	October	4	14400	9936	6912
9,360	November	2	7200	4968	3456
9,360	December	2	7200	4968	3456
$468,000		100%	360000	$248400	$172800

EXHIBIT 2

4 per cent of our annual production during the month of January, we should charge 4 per cent of our total fixed expenses to the month of January. That method would produce a volume variance if we produced more or less than the budgeted footage and, if we closed out the variances monthly, the net effect would be to charge the month with only 4 per cent of the expenses, regardless of the production schedule. Variable and fixed expenses so allocated to months appear in Exhibit 2. This seemed to make sense. Since regular monthly payments amount to 8.3 per cent of the annual expense, the excess would be set up as a deferred charge in any month in which we budgeted less than 8.3 per cent of the annual production, and the differences would be asborbed in those months in which we budgeteed more than 8.3 per cent of the annual production.

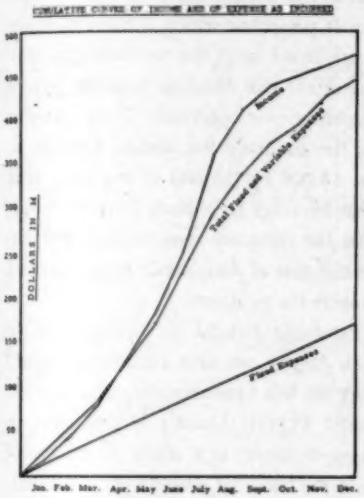

EXHIBIT 3

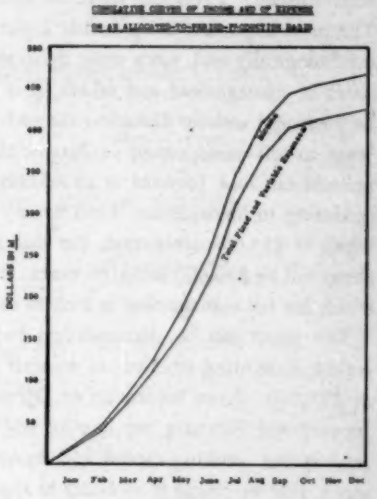

EXHIBIT 4

On Exhibit 3 I have charted the fixed expenses cumulatively as incurred. To that I have added the budgeted variable expenses and have charted the total fixed and variable expenses. On the same chart, I have shown the cumulative income for the year, as budgeted. This predicts an operating loss for the first three months of the year, with a cumulative break-even at April. Then profits begin to accumulate until August when they reach approximately $70,000, after which they shrink back to $40,000. This is the old situation, described earlier. Then, on Exhibit 4, I have plotted the same income figures, and also cumulative variable and fixed expenses, but these are taken upon the proposed percentage

allocation basis. It will be noted that the shape of the costs line approximates that of the income line. Profits start right from January and gradually build up to their peak in December. This is as it should be for understandable accounting presentations. One month is too short a period for which to compute earnings of a company with an annual seasonal business. We must use the complete cycle, which is a year. However, if we must prepare interim reports, we should base these reports upon the annual results instead of the monthly results.

Satisfactory Representations to Management and Creditors

One might argue that I have not done anything except to shuffle the figures around so as to eliminate the loss periods. The total income for the year is the same and the total expenses for the year are unchanged, so what has been accomplished? I feel that there are several things accomplished by this method. The most important thing is that a picture is presented which is more pleasing psychologically and, since most decisions are based upon the psychological attitudes of management and others, it is important that the best possible picture be presented without distorting the facts or being over-optimistic. It makes more sense to tell management in August that the company has earned $40,000 so far and can look forward to an additional $4,000 by the end of the year. It is confusing to management when we say that earnings have been $70,000 so far, which is $35,000 after taxes, but that after the company loses another $30,000 there will be $20,000 left after taxes. It is this sort of double-talk by accountants which has led management to look to engineers for guidance.

The point can be demonstrated by examining Exhibit 3, representing the former accounting practice. If we start with August, we have a cumulative profit of $70,000. From September to December we lost approximately $30,000. In January and February, we lose an additional $8,000. Usually in December or January our working capital had become so depleted, as a result of months of losses, that we found it necessary to apply to the bank for a working capital loan. The bank examined our statements and found that we had lost $30,000 in the past four months and expected to lose an additional $8,000. The final loan was based upon personal guarantees rather than upon company earnings.

If we had used the presentation in Exhibit 4, in which profits begin to show up right from the beginning and the loss months are eliminated, I think the bank would have been willing to go along with us, even though our annual earnings picture remained unchanged.

Accounting Procedure Easily Aligned to New Practice

The mechanics of operating the system are simple enough. All administrative and selling expenses are posted to regular expense accounts in the general ledger.

At the end of the month, the budgeted portions are transferred to the administration or selling expense accounts and to the prepaid expense accounts; the balance is transferred to the variation accounts. Exhibit 5 demonstrates this. For example, as set forth in the exhibit, let us assume that our office supplies budget is $1,000 for the year and that our budgeted expenditure for the month of January is $60. We would budget the $60 as follows: $40 (4 per cent of $1000) to expenses and $20 to prepaid expenses. Since the actual expenditure for the month was $100, we have a budget variance of $40 which is charged to unfavorable variances.

Office Supplies

1956 Jan. 31	Actual Expenditures	VR	10000	1956 Jan. 31	Budgeted Expense	J	4000
					Prepaid Expense	J	2000
					Budget Variance	J	4000

Factory Supervision (Detail Account In Factory Ledger)

1956 Jan. 31	Actual	VR	10000	1956 Jan. 31	Budgeted Expense	J	4000
					Prepaid Expense	J	4300
					Budget Variance	J	1700

Factory Costs (General Ledger Control Account)

1956 Jan. 31	Actual	VR	10000	1956 Jan. 31	Budgeted Expense	J	4000
					Prepaid Expense	J	4300
					Budget Variance	J	1700

Budgeted Factory Expenses (General Ledger)

1956 Jan 31.	Budgeted	J	4000	Jan. 31	Absorbed	J	6000
	Overabsorbed	J	2000				

EXHIBIT 5

To charge the entire $60 over-expenditures to prepaid expenses would be to understate the expenses for the month. To charge $20 to prepaid expenses and the balance to expenses, would give us the same profit and loss as the method described, but it would not point up the causes for variation between the budgeted and actual profit for the month. The method illustrated maintains the principle of charging off-season expenditures to prepaid expenses and, at the same time, preserves the principle of charging excessive expenditures to an expense variation for immediate write-off.

Factory expenses can also be controlled in the manner, as is illustrated in the lower portion of the exhibit. Here the assumptions are as follows: factory

supervision annual budget $1000, budgeted expenditure for January $83, actual expenditure for January $100; budgeted production for January, from Exhibit 2, 14,400 feet, actual production for January 21,600 feet. The actual expenditures are posted to the factory costs control account in the general ledger and to the detailed expense accounts in the factory ledger. The total expenditures for the month are broken down into the budgeted expense, budgeted prepaid expenses, and budget variance as before. This produces, in our illustration, the $40 debit to budgeted factory expenses. Since we produced 21,600 feet instead of the budgeted 14,400 feet, our absorption will be $60 (150 per cent of $40 budgeted), which will produce a volume variance of $20 (unfavorable). The net result will be to break down our actual expenditure of $100 into the following components:

Total expenditure	$100.00
Less: Deferred charges	43.00
Chargeable to January	$ 57.00
Budgeted expense	$ 40.00
Unfavorable budget variance	17.00
Charged to January	$ 57.00

The $20 volume variance can be treated in the usual manner. Some accountants treat it as a reduction of total costs, some as a special income item, and others carry it to the end of the year. I prefer to show it as a reduction of current costs. The system can be further refined, if desired, to break down the budget variance of $17 into rate variances and overtime variances.

Bringing Realism to Bear on Seasonal Situations

To sum up, an interim statement based upon the principle that all costs are related to volume of production spreads the total costs over the total production on a unit of production basis. Costs in excess of the budgeted costs for each of the periods are broken down into two categories. These are budgeted costs in excess of allocable costs and actual costs in excess of budgeted costs. The former are deferred as prepaid expenses and the latter are written off as expense variances. Manufacturing costs and administrative and selling costs are treated alike. The net result is a profit line which approximates the shape of the income line and gives a more realistic evaluation of the operations of the interim period. In effect, it defers early-in-the-year expenditures when they are applicable to mid-year production.

Local 776 Recognizes its Financial Responsibilities

by E. G. SCOVIL

THE UNFAVORABLE PUBLICITY IN THE PRESS RECENTLY, resulting from Senate investigations of the accounting of funds of certain labor unions, has undoubtedly raised a question in the minds of the public as to the integrity of the affairs of unions not under investigation. Inasmuch as news of a favorable tone, in this respect, appears to be seldom publicized, it is time that something was said for the unions that recognized their responsibilities and conduct an honest stewardship of financial affairs for their members.

Organizational Structure of the Union

Motion Picture Film Editors, Local 776, International Alliance of Theatrical Stage Employees and Moving Picture Machine Operators of the United States and Canada, is a non-profit corporation under the laws of California. The local has the authority to exercise full and complete control over its own affairs, provided that it does not take any actions or adopt any laws which conflict with the Constitution and By-Laws of the Alliance. At this time the local has approximately 1,400 members.

In accordance with its by-laws, the local has twenty-four directors, elected by its members by secret ballot. Directors are elected for a term of two years just prior to the annual meeting. The terms of office are so arranged that twelve directors are elected each year, to preclude having an inexperienced board. The officers of the local consist of president, vice-president, secretary, treasurer, and sergeant-at-arms. The officers are elected annually by the members. Except for the president, all must be elected from the board of directors. The president cannot be a director and is elected from the members at large. He presides at all meetings of the members and of the board of directors but does not vote unless there is a tie. He may hold office for two years but is not eligible for re-election for another two years. None of the directors or officers receive any remuneration other than that their dues are waived during the period that they hold office.

The full-time paid staff of the local presently consists of a business agent,

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an assistant business agent, a bookkeeper, a cashier-stenographer and a general clerk. For all practical purposes, the day-to-day activities of the local are in the hands of the business agent, who is hired under contract by the board of directors. According to the by-laws:

> "The business agent shall be the representative of the local in all matters affecting its welfare and, in particular, it shall be his duty to represent the local, together with its individual members, in matters of dispute arising out of violation of contracts for employment and to procure employment for unemployed members. He shall be guided by policies established by the members and/or the board of directors, and shall be answerable to the members and/or the board of directors for matters which have been referred to him for action."

The business agent or any other member of the paid staff is not authorized to sign or countersign checks of the local. Among other things, the by-laws provide that the president (or the vice-president in the absence or inability of the president to act) shall "sign checks for the expenditures of monies of the local which expenditures have been approved by the members or the board of directors," and that either the secretary or the treasurer "countersign, with the president, checks for the expenditure of monies of the local." The Treasurer's duties include:

> "furnish or cause to be furnished an accurate report of the financial condition of the local when required by the members or the board of directors, and to procure an annual certified audit of the financial status of the local in compliance with the requirements of the constitution of the Alliance."

Much of the management work of the local is accomplished by committees which report to the board of directors. These committees are appointed by the president. Prominent among the standing committees is the finance committee. Minutes are kept for all meetings of the members, board of directors and the committees.

The accurate maintenance of the membership roster is the key to the accounting control. It furnishes the basis for determination of dues and initiation fees to be accounted for. The by-laws provide that, if applicants for membership have met certain requirements, their admission to membership is finally subject to approval at a regular membership meeting. Quorum requirements are 200 and a two-thirds majority vote of members present at the meeting is required for election. Members elected are listed in the minutes of the meeting and this provides the accounting authority to add the names to the membership roster. Any change in status, such as an inactive member going on honorary withdrawal

or going into the armed forces, reinstatement of member holding honorary withdrawal card and termination of membership, are required to be recorded.

Functions of the Independent Auditor

The local retains an independent certified public accountant on an annual basis. Auditing procedures include obtaining direct confirmations from members with respect to their initiation and dues balances. In addition to auditing the financial statements, the certified public accountant supervises the preparation of income and expense budgets, attends the quarterly meetings of the finance committee to interpret figures and to explain variances between budgeted and actual figures and generally to act in an advisory capacity. His services also include receiving the secret ballots by mail from the members in the election of officers, tabulating the ballots and reporting the results to the board of directors.

It is apparent that Local 776 is not large enough to justify the full-time employment of a controller or financial executive. However, its organizational structure has provided the means for practical controls over income and expenses. Whether or not the means for such controls are utilized is, of course, the problem. It is believed that the retention of a certified public accountant on a throughout-the-year basis has made this less of a problem.

CHART OF ACCOUNTS

Control Account	Detailed Account	Asset Accounts
100		
	101	Cash in banks and on hand:
		Checking account:
		(Detail by banks)
		Savings Accounts:
		(Detail by banks)
	104	Bank of America, N. T. & S. A.
	150	Cash on hand:
		Petty Cash Fund
200		Marketable securities:
	201	United States Securities
300		Accounts receivable:
	301	Dues receivable
	302	Fines receivable
	303	Returned checks
	304	Advances
400		Prepaid expenses:
	401	Per capita stamps
500		Initiation fees receivable
600		Investments:
	601	(Detail)
700		Fixed Assets:
	701	Furniture and office equipment
800		Accumulated depreciation:
	801	Furniture and office equipment
		Liability Accounts
1000		Accounts payable and accrued expenses:
		Payroll withholdings:
	1001	Federal income taxes
	1002	O. A. B.
	1003	State U. I.
	1005	Pension Plan
		Accrued expenses:
	1012	Federal O. A. B.
	1013	State U. I.
	1014	Federal U. I.
	1015	Pension Plan
	1016	Health & welfare ins.
1100		Deposits from applicants
1200		Initiation fees uncollected

Control Account	Detailed Account	Capital Accounts
1400		Excess of assets over liabilities:
	1401	Balance at beginning
	1402	Initiation fees coll. - current yr.
	1403	Excess of income over expenses
		Income and Expense Accounts
2000		Income:
	2001	Dues
	2002	Withdrawal renewal fees
	2003	Fines collected
	2004	Interest
	2005	Recovered expenses
	2006	Service charges
3000		Expenses:
	3001	Salaries and wages
	3002	Per capita stamps
	3003	Professional fees
	3004	Rent
	3005	Stationery, supplies, etc.
	3006	Dues and contributions to affil.
	3007	Business representatives
	3008	Meetings
	3009	Telephone and telegraph
	3010	Depreciation
	3011	Repairs and maintenance
	3012	Advertising and contributions
	3013	Health and welfare ins.
	3014	Pension fund contributions
	3015	Payroll taxes
	3016	Insurance
	3017	Negotiation and organization
	3018	Funeral Flowers
	3019	Personal property taxes
	3029	Unclassified

EXHIBIT 1

STATEMENT OF ASSETS AND LIABILITIES

ASSETS			LIABILITIES		
Current assets:			Current liabilities		
Cash in banks (Exhibit 4)	$_____		Accounts payable and accrued expenses	$_____	
Cash on hand	_____		Deposits by applicants for membership	_____	
			Total current liabilities		$_____
U. S. securities, at cost		$_____	Initiation fees uncollected		_____
Total current assets		_____			
			Excess of assets over liabilities		
Initiation fees receivable		_____	Balance at December 31, 19		_____
Investment in Hollywood Guilds & Unions Building Association		_____	Initiation fees collected for the two quarters to June 30, 19		_____
			Excess of expenses over income for two quarters to June 30, 19 (Exhibit 3)		_____
Furniture and office equip. at cost	$_____		Balance at June 30, 19		$_____
Less - Accumulated depreciation	_____				
		$_____			
		$_____			$_____

EXHIBIT 2

Accounting Records

Local 776 maintains its books and records on a calendar-year basis. The books of original entry (cash receipts record, cash disbursement record and general journal) are posted currently. The general ledger accounts appearing in the Chart of Accounts (Exhibit 1) are posted and balanced at the end of each month. Financial reports, consisting of Statement of Assets and Liabilities (Exhibit 2) Statement of Income and Expenses (Exhibit 3) and Summary Statement of Cash Receipts and Disbursements (Exhibit 4), are prepared at the end of each quarter of the year. Detailed subsidiary records are maintained to record the individual members' dues, initiation accounts receivable, and the deposits received from applicants.

STATEMENT OF INCOME AND EXPENSE

	Quarter Ended - June 30, 19 -	
Income:	Budget	Actual
Dues		
Withdrawal renewals		
Fines		
Interest		
Recovered expense		
Service charges		
Total income	_____	_____
Expenses:		
Salaries and wages		
Per capita tax		
Professional fees		
Rent		
Stationery, supplies, etc.		
Dues and contributions - Affiliates		
Business representatives		
Meetings		
Convention expense		
Telephone and telegraph		
Depreciation		
Repairs and maintenance		
Advertising and contributions		
Health and welfare Int.		
Pension plan contributions		
Payroll taxes		
Insurance		
Negotiation and organiz.		
Funeral flowers		
Property taxes		
Mileage - Office		
Unclassified	_____	_____
Total expense	_____	_____
Excess of income over expense	_____	_____

Comparisons columns added in actual use.

EXHIBIT 3

It is not the purpose of this particular case study to go into all the routine accounting procedures and methods followed in recording the day-to-day transactions of Local 776. However, it is the intention to highlight in succeeding paragraphs some of the salient features of the accounting system, particularly the controls effected through budgeting procedures.

Cash Procedures

All cash received is deposited intact in the bank on a daily basis. Controls for the amount of cash to be accounted for are discussed in connection with

SUMMARY STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS
For Two Quarters Ended June 30, 19 -

Bank balance, December 31, 195-			$_____
Receipts:			
Income - Dues, etc. per Statement of Income and Expense (Exhibit 3)		$_____	
Initiation fees collected		_____	
Deposits with applications		_____	
Matured U. S. Securities		_____	
Collection of advances for conv. exp.		_____	
			$_____
Disbursements:			
Expense - per Statement of Income and Expense (Exhibit 3)		$_____	
Deduct:			
Per capita stamps paid for in previous quarter	$_____		
Depreciation not requiring payment of funds	_____		
Advance for convention expense	_____		
Expense accrued 6/30/5- $_____			
Less: Expense accrued 12/31/5- _____			
	$_____	$_____	
Purchase of U. S. securities		_____	
Application deposits refunded		_____	
Advances for convention expense		_____	
Per capita stamps paid for in this quarter		_____	
			$_____
Bank balances*, June 30, 19 - (Exhibit 2)			$_____

*May be detailed at bottom of statement

EXHIBIT 4

budgeting of dues income and initiation fees to be received. All cash disbursements, except for minor payments from an imprest fund, are made by means of a voucher check. As previously mentioned, these checks require the signatures of two officers. Vendors' invoices and other supporting data are seen by the officers at the time they sign the checks. Payments from the imprest fund (petty cash fund) must be supported by signed receipts and other appropriate documentary evidence; these petty cash disbursement vouchers are seen by the officers when they sign the checks reimbursing the fund.

Initiation Fees Receivable

When membership applications are accepted, the applicants must deposit with the local an amount equal to one-half of the applicable initiation fee. These

funds are deposited in the regular bank account and the amounts are credited to deposits received from applicants for membership. Five groups of initiation fee rates are in effect and the amounts are graduated according to the earnings of members in each of the following classifications:

1. On call and feature editors.
2. Head sound or music, head librarians, sound effects, music or trailer editors, assistants and librarians.
3. Cartoon editors.
4. TV station editors.
5. Apprentices.

An apprentice program is in effect for training beginners and, as the members advance in classification and in earning power, they are required to pay higher initiation fees and higher dues.

Upon the induction of new members elected as already described, initiation fees receivable account is charged with the applicable amount of initation fees, and initiation fees uncollected is credited with the same amount. Deposits received from applicants for membership is now debited for the total deposits (which represent one-half of the initiation fees) pertaining to the members inducted and initiation fees receivable is credited for the same amount. The unpaid balances of the initiation fees are collectible at the rate of $12.50 per member per quarter. As these balances are collected, the receivable account is credited.

At the end of each quarter, initiation fees uncollected is debited with the total collections received on account of initiations and the contra credit is recorded in initiation fees collected-current year. After so recording the cash collections of initiation fees as permanent capital, the offsetting balances in the receivable and "uncollected" accounts should be in agreement. This amount represents the uncollected initiation fees and should be in agreement with the supporting detailed accounts of individual members' balances.

Initiation fees are accounted for as a direct credit (on a cash basis) to a permanent capital account, initiation fees collected. Because the by-laws provide that dues shall be collected to "defray normal operating expenses", initiation fees are considered as permanent capital and not as income available to meet operating expenses. As to amount, it is a simple matter to budget most of the cash to be received from initiations for each quarer. It involves multiplying $12.50 by the number of members having to make payments on their initiation fees. To the current quarter's initiation payments, there must be added other amounts receivable for increase in initiation fee rates for members who have improved their status by advancing to a higher classification. For example, the

budget of January 1, 1957 for the initiation fees to be collected during the quarter ended March 31, 1957 was computed as follows:

Initiation payments, 446 members x $12.50	$5,575.00
Amounts due because of increases in initiation fee rates, etc.	1,157.75
Budget for quarter ended March 31, 1957	$6,732.75

As of March 31, 1957, the actual cash received from initiation fees was $6,559.50 or $173.25 less than the amount budgeted. The budgeted and actual figures are reconciled as follows:

Budgeted, as above		
Add:		$6,732.75
Collections received in advance of date due		375.00
Collections arising from reinstatements		459.50
		$7,567.25
Deduct:		
Members going on withdrawal	$201.00	
Members suspended	62.50	
Members delinquent	744.25	1,007.75
Actual initiations collected		$6,559.50

Dues Income — Billing and Budgeting

Dues are billed quarterly in advance. Hence it is appropriate that income from this source be budgeted upon the same quarterly basis. The dues are billed to the members for a quarter according to the applicable wage bracket group of the members. There are presently five of these wage bracket groups, in the same manner as for initiation fees, each having a specific rate per quarter. The budget for the quarter ending March 31, 1957 was computed as follows:

Group	Weekly Wage Brackets From	To	Quarterly dues rate	Members per rolls January 1, 1957	Amount
A	$301.00	$400.00 & up	$31.00	171	$5,301.00
B	231.00	300.00	25.00	255	6,375.00
C	176.00	230.00	19.00	240	4,560.00
D	101.00	175.00	15.00	591	8,865.00
E	0	100.00	12.00	147	1,764.00
		Total members paying dues		1,404	$26,865.00

continued

Add: Group classification increases for prior quarters and delinquent balances		613.00
		$27,478.00

Members not paying dues	
Directors and officers	25
Business representatives	2
Total members of the local	1,431

As of March 31, 1957 (close of first quarter of 1957), the budgeted income is reconciled with the actual dues income received as follows:

Budgeted dues income for quarter ended March 31, 1957		$27,478.00
Add:		
Classification increases		349.00
Reinstatements		782.50
Paid in advance		124.00
New members initiated		60.00
		$28,793.50
Deduct:		
Classification decreases	$207.00	
Members suspended	173.00	
Members on withdrawal, etc.	106.00	
Deceased	—0—	
New board members dues waived	113.70	
Delinquent balances	473.00	
		1,072.70
Actual dues income received		$27,720.80

Withdrawal Renewal Fees

Honorary withdrawal cards are issued to members when they leave the jurisdiction of the local's activities. Members may leave to undertake other kinds of work or to take a leave of absence for various reasons. In order to obtain a card, a member must write a letter to the local stating that he or she is no longer working under the jurisdiction of the local and requesting honorary withdrawal status. It is required that the member have paid his or her dues and initiation installment

for the quarter in which the withdrawal is effective. The honorary withdrawal card is good for three years and can be renewed for additional three-year periods by the payment of $25. A tickler file is kept for withdrawal renewal fees, according to due dates, and the budgeted income from this source is based upon such records. If, subsequently, a person desires to return to the local on an active basis, his or her reinstatement requires the payment of the following:

1. Dues for five quarters, including the quarter in which reinstatement is requested (at rate in effect when going on withdrawal or upon reinstatement, whichever is higher).
2. Per capita tax for the remaining time on withdrawal, i.e., total quarters on inactive status less the five quarters for which dues are paid as above.
3. Any unpaid initiation fee balances.

Members going into military service are put on withdrawal and, during such period, their dues and related per capita tax are waived by the local and alliance from the date of withdrawal until 90 days after discharge from military service.

Per Capita Tax

The local must purchase from the Alliance per capita tax stamps for every active member for each quarter at a cost of $4.50 each. Purchases are usually made prior to the applicable quarter and the expenditure, usually in a round figure, since the local has to estimate the stamps needed, is charged to a prepaid account and expensed each quarter. In addition to the per capita stamps relating to specific quarters, the account is charged with per capita stamps purchased that are applicable to prior periods in connection with reinstatements of members who have been on honorary withdrawal. At the end of each quarter, the local must file a quarterly report with the Alliance. In addition to this report, a schedule of per capita charges pertaining to reinstated members, together with a payment therefor, must be rendered. The total active membership figure on the quarterly report to the Alliance must be in agreement with the membership roster and other records of the local. Among other things this report shows data as follows:

1. Number of members last reported (per previous quarter report).
2. Number of members now in good standing.
3. List of members inducted, suspended, expelled, deceased since last report and of those receiving withdrawal cards.

Expenses

The principal expenses of the local are represented by salaries and wages and I.A.T.S.E. per capita stamps. Salaries and wages represent about 51 per cent of total expenses and per capita stamps about 23 per cent or, together, about 74 per cent of the total expenses. As with dues, expenses are budgeted on a quarterly basis and, with the exception of a few minor expense items, the budgeted figures are usually very close to the actual figures.

Some Requirements Under Labor-Management Relations Act

Under Section 9 (f) and (g) of the National Labor Relations Act, 1947 (Public Law No. 101, 80th Congress, 1st Sess.) as amended October 22, 1951 (Taft-Hartley Law), certain reports (Labor Organization Registration Form R-1) containing financial and other information are required to be filed by labor unions with the United States Department of Labor. Subsections 9 (f) (A) and 9 (f) (B) provide for the initial filing of the following data:

Subsection 9 (f) (A)

(1) the names of such labor organization and the address of its principal place of business.

(2) the names, titles, and compensation and allowances of its three principal officers and of any of its other officers or agents whose aggregate compensation and allowances for the preceding year exceeded $5,000, and the amount of compensation and allowances paid to each such officer or agent during such year.

(3) the manner in which the officers and agents referred to in clause (2) were elected, appointed, or otherwise selected;

(4) the initiation fee or fees which new members are required to pay on becoming members of such organization;

(5) the regular dues or fees which members are required to pay in order to remain members in good standing of such labor organization;

(6) a detailed statement of, or reference to provisions of, its constitution and by-laws showing the procedure followed with respect to (a) qualification for or restrictions on membership, (b) election of officers and stewards, (c) calling of regular and special meetings, (d) levying of assessments, (e) imposition of fines, (f) authorization for bargaining demands, (g) ratification of contract terms, (h) authorization for strikes, (i) authorization for disbursement of union funds, (j) audit of union financial transactions, (k) participation in insurance or other benefit plans, and (l) expulsion of members and grounds therefor."

Subsection 9 (f) (B)

(1) filed with the Secretary of Labor, in such form as the Secretary may prescribe, a report showing all of (a) its receipts of any kind and the sources of such receipts, (b) its total assets and liabilities as of the end of its last fiscal year, (c) the disbursements made by it during such fiscal year, including the purpose for which made, and

(2) furnished to all of the members of such labor organization copies of the financial report required by paragraph (1) hereof to be filed with the Secretary of Labor.

Subsequent filings with the Secretary of Labor are covered by sub-section (g) of Section 9 which requires annual reports as a condition of certification by the National Labor Relations Board. The union is required to furnish these annual financial reports to all of its members. The distribution of such financial data can be accomplished in several ways. Local 776 mails copies of its annual financial statements to each of its members prior to its annual membership meeting. At the annual meeting, the Treasurer reads the financial report to the members, who are then given the opportunity to ask any questions and receive answers pertaining to the report.

Federal and State Tax Status

Under Section 501 (c) (5) of the Internal Revenue Code of 1954 and Section 23702 of the California Tax Law, Local 776 is exempted from federal income tax and State of California franchise tax. Labor organizations must establish their exempt status under Section 501 (c) (5) by filing an exemption application (Form 1024) with the District Director of Internal Revenue of the district in which they are located. An exempt labor organization is required to file an annual information return (Form 990) on or before the 15th day of the fifth month following the close of the annual accounting period. Local 776, being on a calendar-year basis, is required to file its return on or before May 15th. Corporation claiming exemptions from the California State franchise tax must file an Application For Exemption From Tax (Form FT-190) with the Franchise Tax Board. Labor organizations are among the exempt organizations which are required to file annual information returns if gross income exceeds $25,000. The return (Form 199) is required to be filed with the Franchise Tax Board under the same time limit as for the Federal return.

Pension and Health and Welfare Plans

The members of Local 776, together with the members of other locals serving the Motion Picture Industry in Hollywood, come under pension and health

and welfare plans which are jointly administered by the employers and the unions. The operation of these plans under the joint administration of both parties has proved very satisfactory and might well be a reliable guide for others to follow in the proper handling of such trust funds.

A Responsible Administration

It appears that labor organizations are an integral part of our present-day economy. Some union leaders have abused their position and authority but it is not fair to judge all by these few. Possibly the present laws governing labor organizations are not strict enough and lack "teeth" as far as enforcement is concerned, and maybe now legislation is required to protect the union members, particularly with regard to welfare and pension funds. However, it seems that, if all labor organizations conducted their financial affairs as Local 776 does, neither the members nor the public would have too much to worry about.

Converting from Conventional to Direct Standard Costs

by WILLIAM A. THORN

DO ACCOUNTANTS NOW USING conventional standard cost systems really believe that basic costs "won't work," or do they resist the direct cost approach because they lack understanding of the details involved in operating a direct cost system? If this latter reason is the one why more companies are not using direct costs, then it may be possible to gain a few "converts" from this discussion. Having used conventional standards as well as direct standards, our experience should be of help to others. If conventional standards are employed, the conversion is quite minor. A greater change is involved if any other cost system is employed. But, even then, the changeover is not difficult. After all, a direct cost system is simply the integration of standard costs with flexible budgets and the direct costing technique.

An undersanding of detailed flexible labor and expense budgets should help place on common ground those using any other type of cost system than standard cost, in order that they may better understand the later comments on the technical differences between direct standards and conventional standards. Let us understand clearly from the start that the major difference between direct costs and conventional standards lies in the accounting treatment of fixed expense as related to:

1. Product standard cost cards.
2. Activity (or volume) variance.
3. Cost of sales.
4. Inventory evaluation.
5. Profit and loss presentation.

In the remainder of this article, we will take up these points in order.

Product Standard Cost Cards

When setting up a conventional or direct cost system, specific steps are followed to develop a flexible budget for labor and expense for each productive

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BUDGET DATA SHEET

DATE	COMPILED	ACCT. CLASS	COST CENTER NAME	COST CENTER NO.
DATE	ACCEPTED	PERIOD	ACCOUNT NAME	ACCOUNT NO.
DATE	APPROVED	UNIT		UNITS IN PERIOD
DATE	REASON FOR REVISION OF BUDGET		AMOUNT	TOTAL REVISION
			$	$

THIS ACCOUNT IS CHARGED WITH:

BUDGET WAS DETERMINED AS FOLLOWS:	TOTAL	CONSTANT	VARIABLE
TOTAL BUDGET			

EXHIBIT 1

and service department in the plant, based upon forecast volume. Exhibit 1 is a form of budget data sheet used to determine a monthly allowance for each account in each department. Expense is classified as constant (fixed), mixed or variable. The decision to call an expense fixed, mixed or variable is made in several ways, such as by judgement, scatter charts, arithmetical calculations of

COST CENTER NO.	COST CENTER		BUDGET FOR DIRECT LABOR AND EXPENSE
APPROVED 19 5	PERIOD	UNIT	FISCAL YEAR _____
BY	PREPARED BY	UNITS IN PERIOD	PRODUCTIVE DEPARTMENTS

DIRECT LABOR

ACC. NO.	ACCOUNT NAME	NO. OF PERS.	BUDGETED UNITS	BUDGETED DOLLARS	RATES DIRECT LABOR	RATES I.D. LAB. & O. EXPENSE	RATES PER
9901	DIRECT LABOR - MEASURED						
9902	DIRECT LABOR - UNMEASURED						
	TOTAL						
				F.			
				V.			

INDIRECT LABOR & EXPENSE

ACC. NO.	ACCOUNT NAME*	CLASS F-V-M	FIXED PORTION	VARIABLE PORTION	BUDGETED DOLLARS	EXPENSE RATE
	*Captions for This Column					

___ Supervision	Overtime Premium	Pro-rated Service:	___
___ Clerical	Total indirect Labor	Boiler Room	___
___ Material Handling	Repairs & Maint. Mat'l.	Maintenance Shop	___
___ Inspection	Product Supplies	Stock Room	___
___ Cleaning		General Plant	___
___ Other Service	Total Direct Expense	Total Service	___
___ Repairs & Maint. Labor			

TOTAL FOR COSTING					
COSTING RATES					

EXHIBIT 2

high and low production and costs, least squares, etc. We use scatter charts, combined with judgement. The important point is to establish the budget allowance with fixed expense separated from variable expense.

Upon completion of budget allowances for each account in a department, summaries are prepared using a form similar to Exhibit 2. Subtotals develop the labor and expense for which the departmental foreman is directly responsible. In addition to direct expense, all service department budgets are pro-rated to productive departments, using such factors as pounds of steam, square foot area, payroll dollars, number of employees, etc., selecting the base most appropriate to fairly distribute the service involved. The budgeted pro-rated expense is posted to the departmental summary sheet and added to budgeted direct expense, to obtain total standard operating costs for each productive department (including plant services), still segregated between fixed and variable expense.

Standard costing rates are obtained in each department for fixed expense and variable expense by dividing forecast volume into respective totals of direct and pro-rated fixed and variable costs. The resulting departmental costing rates are posted in the upper right hand corner of Exhibit 2 for use on standard cost cards. The form, used in a conventional system for costing parts or sub-assemblies, indicates how the standard costing rate is applied to units of measurement to obtain labor and expense costs of manufatcuring for each cost center through which the part must pass. However, the costing rate is not segregated between fixed and variable expense when used on the cost card, even though the segregation is available from the budget summary sheet.

At this point, the first difference between conventional standards and direct standards develops. A conventional system includes fixed expense as part of the departmental costing rate, thus including fixed expense in the product cost. A direct cost system excludes fixed costs from product costs by using only the variable portion of the departmental costing rate. Exhibit 3 shows a parts cost

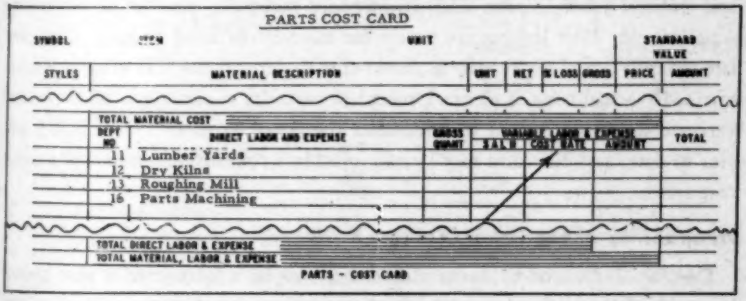
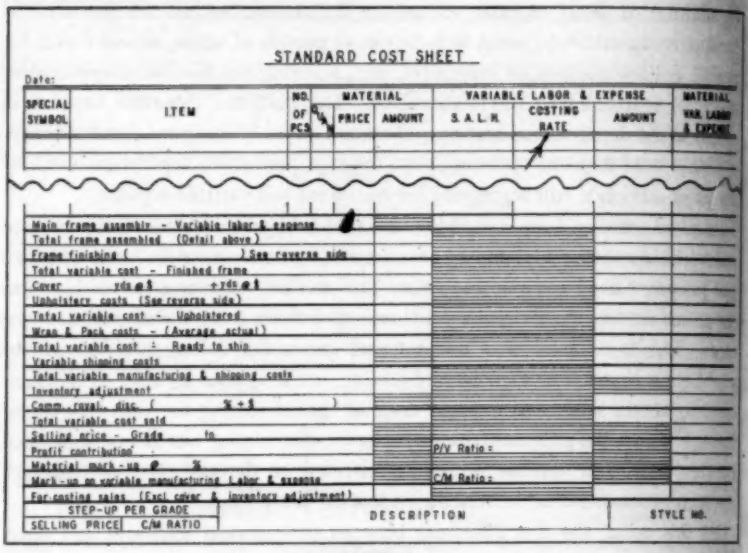


EXHIBIT 3

card used in a direct cost system. It differs from the card used in the conventional system only in the costing rate. As standard costs are developed for component parts or sub-assemblies, they are accumulated on a product cost sheet similar to Exhibit 4, for direct standard costs. Again, the difference between the conventional form and the one shown is the exclusion of fixed expense from the costing rate on the latter.



STANDARD COST SHEET

Date:

SPECIAL SYMBOL	ITEM	NO. OF PCS.	MATERIAL PRICE	MATERIAL AMOUNT	VARIABLE LABOR & EXPENSE S. A. L. H.	VARIABLE LABOR & EXPENSE COSTING RATE	VARIABLE LABOR & EXPENSE AMOUNT	MATERIAL VAR. LABOR & EXPENSE

Main frame assembly - Variable labor & expense			
Total frame assembled (Detail above)			
Frame finishing ( ) See reverse side			
Total variable cost - Finished frame			
Cover yds @ $ + yds @ $			
Upholstery costs (See reverse side)			
Total variable cost - Upholstered			
Wrap & Pack costs - (Average actual)			
Total variable cost - Ready to ship			
Variable shipping costs			
Total variable manufacturing & shipping costs			
Inventory adjustment			
Comm., royal., disc. (% + $)			
Total variable cost sold			
Selling price - Grade to			
Profit contribution -		P/V Ratio =	
Material mark-up @ %			
Mark-up on variable manufacturing Labor & expense		C/M Ratio =	
For costing sales (Excl. cover & inventory adjustment)			

STEP-UP PER GRADE		DESCRIPTION	STYLE NO.
SELLING PRICE	C/M RATIO		

EXHIBIT 4

There is no radical change in the handling of accounting detail. In either system, source documents of payroll distribution, vendor invoices, supply requisitions, charge memoranda, etc., are used to collect the actual costs of direct and indirect labor, repairs and maintenance materials, product and operating supplies, etc. Cost ledgers are set-up for machine or hand posting to accumulate monthly actual expense by account for each department. No attempt is made to classify actual costs as to fixed, mixed or variable, in either system. A cost and variance statement is used to summarize the actual expense for the month and year to date, and this form may be employed in a conventional system or a direct cost system.

Availability of the Profit/Volume Ratio

Despite absence of extensive differences, we have uncovered a new operating tool. Because fixed expense is eliminated on product cost sheets, a new

tool for measuring the profitability of specific products is made available. This is called the profit/volume ratio, obtained by subtracting total variable manufacturing expense from net sales price to obtain profit contribution and dividing this by net sales price. The higher the p/v ratio for each product, the more profit contribution becomes available to pay off fixed expense and contribute towards profit. If a master profit plan has been prepared forecasting sales, profit contribution, expenses and net profit, with a consolidated p/v ratio for all products, then the standard p/v ratio for each product may be compared to the master profit plan to determine whether or not the specific product will contribute its fair share to the total profit goal for all products.

The conventional product cost sheet does not permit this calculation of p/v ratio because fixed costs are hidden in the total material, labor and expense costs. Thus, the only check possible on the profitability of the product is to calculate the indicated net profit as a percentage of sales price.

This relationship is entirely misleading to everyone concerned with management, from the president down. It may persuade a company to push a product which would result in net losses instead of net profits. For example, look at the following figures and ask yourself, "which product should I push?"

	Product A	Product B
Sales price	$1.00	$1.00
Manufacturing cost:		
Variable & fixed— (segregation unknown in conventional systems)	.70	.80
Gross profit	$ .30	$ .20
% on sales price	30%	20%

Obviously, Product A, returning a yield of 30% on sales price, would appear to be the answer. But let us change the presentation to the direct cost method:

		Product A	Product B
Sales price		$1.00	$1.00
Manufacturing cost:			
Variable	$ .40	.40	.30
Fixed	.30	—	—
Profit contribution		$ .60	$ .70
P/V ratio		60%	70%

Here we find that our original thinking was wrong and that Product B is the one to sell. The reason is that not one dollar of company profit can result

until the entire cost of fixed expense for the year is paid off. In order to pay it off, profit contribution is needed in as large amounts as possible, as quickly as possible. Then all of the profit contribution will become actual profit when fixed expense has been absorbed at attainment of a break-even sales volume.

One comment usually heard when an accountant is objecting to direct costs is, "How can I be sure that sales department will price a product sufficiently high to allow for fixed expense, if fixed costs are not included on the product cost sheet?" The first answer to this question is that rarely are sales prices established for a product solely on the basis of a product cost estimate prepared by the accountant. Usually, market demand and competition are the influencing factors in the setting of sales prices. The product standard cost sheet reveals the expected profitability of the product at the sales price established and then sets off a chain reaction, when necessary, to reduce manufacturing costs by redesign, specification changes, method studies, etc. if the indicated profit does not meet management's expectations. The second answer is to use the new tool of p/v ratio developed in a direct cost system as described previously. For example, assume that careful forecasting has resulted in a master profit budget of the following figures for the period:

Net sales	$9,500,000
Variable cost of sales	7,125,000
Profit contribution	$2,375,000
P/V ratio	25%

If a p/v ratio of 25 percent or more develops for each product being costed on a product standard cost sheet, under the direct cost procedure, then it is logical to believe that the master profit goal for all products will be achieved, because the whole is equal to the sum of its parts.

Naturally, if actual variable expense or actual fixed costs are not controlled within the budget limitations, a loss in actual profit can result, regardless of the p/v ratio indicated on product standard cost sheets. The control of actual expense within budget limitations is a very important part of the accountant's over-all job. The attaining of profit goals is, by no means, just one more task for the sales department alone. The entire company, working as a closely-knit team, must concentrate on the attaining of profit objectives. Direct cost systems provide additional tools for all concerned to assist in reaching profit goals.

Activity (or Volume) Variance

Returning again to standard costs as conventionally handled, the determination of current budget allowance on the cost and variance statement, for the

SUMMARY OF MANUFACTURING LABOR AND EXPENSE

	DEPARTMENT TITLE	1 RATIO OF ACTIVITY	2 VARIABLE LAB.& EXP. @ 100%	3 CURRENT ALLOWANCE ON VARIABLE	4 CURRENT ALLOWANCE ON FIXED	5 CURRENT ALLOWANCE TOTAL	6 TOTAL ACTUAL EXPENSE	7 VARIANCES TOTAL	8 VARIANCES ON FIXED	9 VARIANCES ON MIXED & VARIABLE	10 GENERAL FACTORY VARIABLE EXP. @ 100%	11 GENERAL FACTORY CURRENT ALLOWANCE	12 TOTAL VARIABLE RECOVERED ACTUAL UNITS PRODUCED	13 TOTAL VARIABLE RECOVERED VAR. UNIT COST. RATE	14 TOTAL VAR. CO
	PRODUCTIVE AND SHIPPING	(Sch. A)	(Budget)	(1 x 2)	(Sch. B)	(3 + 4)	(Cost Ledger)	(5 - 6)	(C & V S.)	(9 - 7)	(Budget)	(1 x 10)	(Sch. A)	(Budget)	(12 x
11	Lumber Yard														
12	Dry Kilns														
13	Roughing Mill														
14	Chip Core Manufacturing														
15	Veneering														
16	Parts Machining														
18	Frame Assembly														
20	Frame Finishing														
25	Cover Cutting														
26	Cover Sewing														
27	Cushion & Back Filling														
30	Chair Upholstering														
31	Lounge Upholstering														
33	Foot Stools														
35	Wrap & Pack														
52	Warehouse & Shipping														
	Sub Total - Productive														
	SERVICE								(B)	(E)					
40	Boiler Room														
41	Maintenance Shop														
42	Frame Shop Supplies														
43	Upholstery Supplies														
44	Cover Stock Room														
45	Garage														
46	Sample Making														
47	Chair Repairs														
48	Quality Engineering														
49	General Factory														
55	Frame Parts Storage														
60	Plant Office														
	Sub Total - Service								(F)	(G)					
	Total Manufacturing & Shipping														
57	Truck Fleet			(A)	(B)										
	Total Labor Expense						(C)	(D&A)							

JOURNAL ENTRY

ACCOUNT		DEBIT	CREDIT
21 - Inventory	(A)		
96 - Profit & Loss (Mfg)	(B)		
96 - Profit & Loss (Trucking)	(C)		
843 - Variance on Fixed (Prod)	(D)		
844 - Variance on Var (Prod)	-(E)		
Total Production Depts			
843 - Variance on Fixed (Svce)	(F)		
844 - Variance on Var (Svce)	(G)		
Total Service Depts			
99 - Manufacturing Control	(H)		
TOTAL			

EXHIBIT 5

actual volume attained, is accomplished under either system by multiplying ratio of activity by the variable budget allowance originally established for forecast volume. Ratio of activity is obtained by dividing actual volume attained by normal volume budgeted. Fixed expense is allowed in the budgeted amount. The variable portion of a mixed account is multiplied by the activity ratio and added to the fixed portion to determine the total current allowance.

In a conventional cost system, it is not necessary to label the current budget allowance for each account on the cost and variance statement as fixed, mixed or variable. Only the total budget allowance, by account, is needed to compare to the actual expense and then figure the variance. In a direct cost system, a slight change in technique takes place on the pencil worksheet of the cost and variance statement. The current budget allowance amounts for each account are marked, F or V, to indicate fixed or variable. The fixed portion of a mixed account is shown separately from the variable portion in the budget allowance column. This is done only on the pencil copy. When the statement is typed, the current budget allowance for each account is shown as a total figure, with no segregation of fixed and variable expense indicated.

The reason for doing this is obvious when Exhibit 5 is studied. This is a work-sheet used in a direct cost system to develop the journal entry for the charge to inventory account for variable manufacturing labor and expense earned at standard rates, to record the variance on fixed and variable expense, and to credit the manufacturing control account for the total actual expense. The current allowance section is sub-headed "on variable", "on fixed", and "total". The difference between "total actual expense" and "current allowance—total" represents "total variance", Column 7. Reference to the pencil copy of the cost and variance statement permits selection of the variance on fixed expense accounts and this total variance for each department is posted in Column 8, and subtracted from Column 7. Thus, Column 9 represents the variance on mixed and variable expenses.

In a conventional standard cost system, the difference between actual expense and current budget allowance is called controllable variance. The difference between direct cost recovered at standard rates and the current budget allowance would be classified as volume variance and must be used on the profit and loss statement to adjust standard cost of sales. In addition, total labor and expense earned at standard, including both fixed and variable costs, is charged to inventory account. A direct standard cost system requires no volume variance account. Refer again to Exhibit 5, Column 4. The total current budget allowance on fixed expense is not charged to inventory. The debit is made directly to profit and loss account and this is a major difference between the two sy-

tems. Direct cost advocates believe that fixed expense, such as depreciation, taxes, insurance, etc., are "time" or "period" costs and not inventory charges. The theory is that depreciation, for example, is a constant cost of operating a business, whether one unit or a million units are produced.

Those accountants who have tried to explain profit or loss to top management during a month of high sales and low production, realize how difficult it is to describe the effect on cost of sales and monthly earnings of over or underabsorbed fixed overhead. One advantage of a direct cost system is this elimination of activity (or volume) variance on earnings statements, because management then receives an accurate picture of corporate earnings in direct relation to actual sales of the period.

Costing Sales; Inventory Valuation; Profit and Loss

To this point, we have two technical differences between conventional and direct cost systems:

1. Fixed costs are eliminated from parts and product standard cost cards.
2. Current allowance on fixed expense is charged to profit and loss instead of inventory account, thus eliminating the activity (or volume) variance account.

A third difference develops when costing sales in a direct cost system. Only the standard variable manufacturing expense unit values are used to cost the actual volume of sales to customers. This figure is obtained from the standard cost sheet, Exhibit 4, the "total variable manufacturing and shipping cost" line.

A fourth difference is in the valuation of physical inventory quantities. Again, only the standard variable manufacturing expense unit values are used to extend quantities of goods on hand. Of course, the elimination of fixed expense in the valuation of inventories causes the loudest objection to converting to direct standard cost systems. Until such time as the Internal Revenue Service approves this method, accountants will have extra work involved to re-evaluate year-end inventories to include fixed expense for tax reporting purposes. But this once-a-year adjustment should not be sufficient cause for a company to miss the potential advantages of direct costs for twelve months of internal control reporting.

The fifth and final step necessary to convert from a conventional standard cost system to a direct cost system develops in the presentation of monthly earnings.

The left-hand portion of Exhibit 6 shows the captions for the usual format

CONVENTIONAL STATEMENT OF PROFIT AND LOSS		STATEMENT OF PROFIT AND LOSS DIRECT COST BASIS	
Gross Sales		Equivalent Units Sold	
Less: Returns & Allowances			
Cash & Trade Discounts		Gross Sales	
Total Deductions		Less Allowances	
Net Sales		Net Sales	
Actual Cost of Sales	(A)		
Gross Profit		Variable Costs:	
Admin. & Selling Expense	(B)	Mfg. & Ship. at Std.	
Net Operating Profit		Variance on Mfg. & Ship.	
Other Income & Expense	(C)	Mfg. & Ship. - Actual	
Earn. Before Income Tax			
Reserve For Income Tax		Selling Costs at Std.	
Net Earnings		Commissions	
		Royalties & Bonus	
Cost of Sales & Variances (A)		Cash Discounts	
Standard Cost of Sales		Volume Discounts	
Manufacturing Variances:		Total Selling at Std.	
Material Price		Variance on Selling	
Material Usage		Selling Costs - Actual	
Control, Labor and Expense			
Volume Variance		Total Var. Costs - Actual	
Inventory Adjustments			
Change in Standards		Profit Contribution	
Altavista Plant		P/V Ratio	
Smyrna Plant			
Total Manufacturing Variances		Fixed Expense	
Actual Cost of Sales	(A)	Plant - Budget	
		Plant - Variance	
Administrative, Selling Expense & Variances (B)		Plant - Actual	
Standard Expense - Admin. & Selling		Head Office - Budget	
Variances:		Head Office - Variance	
Shipping		Head Office - Actual	
Samples		Total Fixed - Actual	
Customer Service Repairs			
Administrative		Operating Profit	
Selling & Advertising		Other Income & Exp.	
Total Variance - Admin. & Selling		Gain/Loss on Trucking	
Actual Expense - Admin. & Selling	(B)	Net Profit Bef. Fd. Tax	

EXHIBIT 6

in a conventional standard cost system, for summarizing sales, cost of sales and profit or loss. All costs on this statement include both fixed and variable expenses. Standard cost of sales is adjusted for the several manufacturing variance accounts, including volume variance for over or under-absorbed fixed overhead. There is no check possible on the actual profit contribution made toward paying off fixed expenses. Questions will be asked about low profit during months of high sales and low production, because volume variance confuses the earnings picture.

The right-hand portion of the same exhibit presents profit and loss statement captions used in conjunction with a direct cost system. The segregation of fixed and variable expense has been maintained throughout the entire procedure. Therefore, it is possible now to show the standard variable cost of sales, the application of variable variance, the actual variable cost of sales, the actual profit

contribution and the actual p/v ratio. Fixed expense is deducted from profit contribution to obtain manufacturing profit or loss. Some companies prefer to prorate the fixed expense to sales classifications, in order to determine manufacturing profit by class of sale, but they do this only on the profit and loss statement by various methods of allocation.

This presentation of earnings is clear and factual. No questions can arise about unabsorbed fixed expense, because there "ain't no such animal". Fixed costs are "absorbed" completely. Profit is truly profit for the actual sales made during the month. Actual sales realized may be compared to break-even sales budgeted, in order to determine if the point has been reached at which all profit contribution is actually all profit. The p/v ratio may be compared to the master profit plan.

Little Inconvenience for Great Gain

When we, as accountants, analyze the technical differences between the operation of a conventional standard cost system and a direct standard cost system, we find nothing, in the detail involved, about which to become alarmed. The changes required can be easily incorporated into the daily routine by an alert accountant. In summary, the conversion steps necessary are as follows:

1. Develop parts and product standard cost cards, using only variable expense for costing rates.
2. Charge current budget allowance on fixed expense to profit and loss account, instead of inventory account, thus eliminating activity (or volume) variance.
3. Cost sales at the variable expense costing rate only.
4. Evaluate physical inventory quantities at the variable manufacturing expense rate only, eliminating fixed expense from this rate.
5. Revise the presentation of monthly profit or loss, in order to maintain the segregation of variable and fixed expenses and thus give to management a factual picture of monthly earnings for sales made during the month.

If an accountant's objection to direct costs has been caused by lack of understanding of the handling of technical details involved in operating such a system, it hoped that this discussion will serve to convince him that, in the final analysis the operation of direct cost system is really not so different after all! In the same breath, I might add, "But widely different in the control information made available to management!"

Beyond These Covers

Books

Accounting and the Analysis of Financial Data

Edison E. Easton and Byron L. Newton, McGraw-Hill Book Co., 330 West 42nd St., New York 36, New York, 1958, 449 pp., $7.

The road taken by the authors of this book winds through accounting as such, its application to businesses of various types, and "special areas of accounting." Analysis is then taken up in relationship to financial statements, supporting data, use of ratios, and budgetary planning and control. The work is directed to "nonaccountants for a comparatively brief coverage—of accounting and statement analysis."

Practical Financial Statement Analysis

Roy A. Foulke, McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y., Fourth Edition, 1957, 712 pp., $10.

Designated as a "completely up-to-date reference volume," this new edition by a veteran analyst of individual businesses and industries relates many of the methods of analysis currently in use to company or industry data and supplies case material and reflections of experience with analysis and its results. Balance sheet and income statement ratios (each numerous) are given separate sections of the book.

Control of Nonmanufacturing Costs

American Management Association, 330 West 42nd St., New York 36, N. Y., 1957, 142 pp., Paper Bound, $3.

Reflecting papers given at a conference last May, this report of proceedings touches on many topics of significance in management accounting, including "Expense Control in a Changing Business Environment," "Some Unusual Devices for Reducing Office Costs," "Controlling Paperwork and Accounting Costs" and "Work Standards and Their Relationship to Methods Study." Most of the papers are case studies or have case background.

Work Simplification

Robert N. Lehrer, Prentice-Hall, 70 Fifth Ave., New York 22, N. Y., 1957, 394 pp., $6.95.

Detailed, broad, and basic in its approach (which includes electronic data processing in its scope), this text ranges from consideration of human nature to work simplification programs and methods, dealing consistently with the various aspects of man and effort in business activities. It is perhaps largely addressed to engineers, includes case examples and is thoroughly illustrated.

Engineered Work Measurement

Delmar W. Karger and Franklin H. Bayha, The Industrial Press, 93 Worth St., New York 13, N. Y., 1957, 633 pp., $12.

The subject of methods-time measurement is here comprehensively treated in the interests of futherance of scientific management, the origins and development of which occupy the introductory section of the book. Time and motion study techniques are given central attention, with the setting of standards and their use in labor cost control (as an engineering application) accorded emphasis as among the principal results of use of m-t-m. The concluding chapter bears the title "Management of Methods and Labor Control."

Time and Motion Study

Ralph M. Barnes, John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y., Fourth Edition, 1958, 663 pp., $9.25.

"New material" and "more diverse illustrations" are named as the principal objectives

of this revised edition of a volume first issued twenty years ago and earlier revised in 1940 and 1949. It is a comprehensive, detailed, and well-illustrated text, largely in the engineering field but of interest to accountants in connection with its relationship to standard costs and clerical operations.

Articles

The Marginal Income Concept in Cost Accounting

Alphonse Riverin, Cost and Management, February 1958.

A summary article on this now well-discussed but still surprisingly current topic, Professor Riverin's paper covers identification, acceptability, advantages, and disadvantages of direct costing, with tabular exhibits to show its characteristic results and usefulness. The author also recognizes a number of problems raised by adoption of direct costing.

Process Cost Control Systems

E. B. Nitchie, Chemical Engineering, October 1957.

Chemical operations are the specific area dealt with in this article on construction of systems for the control of costs. It is a detailed, well-illustrated paper concerned, among other things, with the use of standard costs and flexible budgeting, and with effective reporting of variances.

A Direct Labor Budgeting and Scheduling System for Research and Development Activities

E. Nelson Drake, Business Budgeting, February 1958.

In line with its title, this article comprises a description of a thorough-going system, with frequent progress checks, for keeping track of the completion and related costs-vs-budget status of projects for research and development, against the background of cost plus fixed fee contracting for the government.

Price-Level Depreciation and Replacement Cost

Wendell P. Trumbull, Accounting Review, January 1958.

The author of this article does not omit to consider that adjustment of depreciation to reflect replacement cost has its special applicability in a period of declining as well as rising prices. Contending also that "the real objective of income determination is the rate of return on investment," he suggests that correcting the income statement "calls for price-level adjustment of plant and other asset accounts."

Useful Formula for DDB and SYD Depreciation

John H. Myers, Accounting Review, January 1958.

In this brief paper, the author notes that "most of us accountants have long since allowed our mathematics to grow rusty" and "sets out some formulae that will enable the non-mathematician accountant to compute" provisions, without tables, for "double-declining balance and sum-of-the-year's-digits" methods of depreciation.

Addresses of Periodicals

Accounting Review
c/o R. Carson Cox, College of Commerce, Ohio State University, Columbus 10, Ohio, Single copy $1.50.

Business Budgeting
528 West 12th St., Covington, Kentucky.

Chemical Engineering
330 West 42nd St., New York 36, N. Y., Single copy 75¢.

Cost and Management
31 Walnut St. South, Hamilton, Ontario, Canada, Single copy 50¢.